THE

AMERICAN JOURNAL

OF THE

MEDICAL SCIENCES.

No. XXIV.—August, 1833. 25

COLLABORATORS.

JACOB BIGELOW, M. D. *Professor of Materia Medica in Harvard University, Boston.*

EDWARD H. BARTON, M. D. *of St. Francisville, Louisiana.*

HENRY BRONSON, M. D. *of Albany, New York.*

WALTER CHANNING, M. D. *Professor of Midwifery and Legal Medicine in Harvard University, Boston.*

N. CHAPMAN, M. D. *Professor of the Institutes and Practice of Physic and Clinical Practice in the University of Pennsylvania.*

JOHN REDMAN COXE, M. D. *Professor of Materia Medica and Pharmacy in the University of Pennsylvania.*

D. FRANCIS CONDIE, M. D. *of Philadelphia.*

WILLIAM C. DANIELL, M. D. *of Savannah, Georgia.*

WILLIAM P. DEWEES, M. D. *Adjunct Professor of Midwifery in the University of Pennsylvania.*

S. HENRY DICKSON, M. D. *Professor of the Institutes and Practice of Medicine in the Medical College of South Carolina.*

BENJAMIN W. DUDLEY, M. D. *Professor of Anatomy and Surgery in Transylvania University.*

ROBLEY DUNGLISON, M. D. *Professor of Physiology, Pathology, &c. in the University of Virginia.*

GOUVERNEUR EMERSON, M. D. *of Philadelphia.*

PAUL F. EVE, M. D. *Professor of Surgery in the Georgia Medical College.*

JOHN W. FRANCIS, M. D. *Professor of Obstetrics and Forensic Medicine in Rutgers Medical College, New York.*

E. GEDDINGS, M. D. *Professor of Anatomy and Physiology in the University of Maryland.*

W. W. GERHARD, M. D. *of Philadelphia.*

WILLIAM GIBSON, M. D. *Professor of Surgery in the University of Pennsylvania.*

R. E. GRIFFITH, M. D. *of Philadelphia.*

E. HALE, M. D. *of Boston.*

ROBERT HARE, M. D. *Professor of Chemistry in the University of Pennsylvania.*

GEORGE HAYWARD, M. D. *of Boston.*

THOMAS HENDERSON, M. D. *Professor of the Theory and Practice of Medicine in the Columbian College, District of Columbia.*

WILLIAM E. HORNER, M. D. *Professor of Anatomy in the University of Pennsylvania.*

DAVID HOSACK, M. D. *Professor of the Institutes and Practice of Medicine in Rutgers Medical College, New York.*

ANSEL W. IVES, M. D. *of New York.*

SAMUEL JACKSON, M. D. *Assistant to the Professor of the Institutes and Practice of Medicine and Clinical Practice in the University of Pennsylvania.*

SAMUEL JACKSON, M. D. *of Northumberland, Pennsylvania.*

VALENTINE MOTT, M. D. *Professor of Pathological and Operative Surgery in the College of Physicians and Surgeons, New York.*

JAMES MOULTRIE, JR. M. D. *of Charleston, S. C.*

REUBEN D. MUSSEY, M. D. *Professor of Anatomy and Surgery in Dartmouth College, New Hampshire.*

T. D. MUTTER, M. D. *of Philadelphia.*

PHILIP SYNG PHYSICK, M. D. *Professor of Anatomy in the University of Pennsylvania.*

NATHANIEL POTTER, M. D. *Professor of the Theory and Practice of Medicine in the University of Maryland.*

THOMAS SEWALL, M. D. *Professor of Anatomy and Physiology in the Columbian College, District of Columbia.*

ASHBEL SMITH, M. D. *of Salisbury, North Carolina.*

A. F. VACHÉ, M. D. *of New York.*

JOHN WARE, M. D. *of Boston.*

JOHN C. WARREN, M. D. *Professor of Anatomy and Surgery in Harvard University, Boston.*

J. WEBSTER, M. D. *Lecturer on Anatomy and Surgery, Philadelphia.*

THOMAS H. WRIGHT, M. D. *Physician to the Baltimore Alms-House Infirmary.*

EDITOR—ISAAC HAYS, M. D.

TO READERS AND CORRESPONDENTS.

Communications have been received from Professor WARREN, Drs. MORTON, GERHARD, ROBERTSON, and PANCOAST.

Drs. FITZ GIBBONS and MONETT's communications have been unavoidably postposed.

We have received the following works:—

Pathological Anatomy. Illustrations of the Elementary Forms of Disease. By ROBERT CARSWELL, M. D. Professor of Pathological Anatomy in the University of London, &c. &c. Fasciculus first, Tubercle. London, Longman & Co. 1833.

Letters on the Cholera Morbus. Containing ample evidence that this disease, under whatever name known, cannot be transmitted from the persons of those labouring under it to other individuals by contact—through the medium of inanimate substances—or through the medium of the atmosphere; and that all restrictions by cordons and quarantine regulations are, as far as regards this disease, not merely useless, but highly injurious to the community. By Dr. GILLKREST, Deputy Inspector General of Army Hospitals. London, 1831. (From the author through Dr. ASHBEL SMITH.)

Essay on Yellow Fever. By Dr. GILLKREST. (From the author through Dr. ASHBEL SMITH.)

Phrenology, in Connexion with the Study of Physiognomy. By J. G. SPURZHEIM, M. D. with thirty-five plates. To which is prefixed a biography of the author by NAHUM CAPEN. Boston, Marsh, Capen & Lyon, 1833. (From the publishers.)

A Memoir upon Staphyloraphy. By ALEXANDER E. HOSACK, M. D. one of the Surgeons of the Marine Hospital, New York. New York, 1833. (From the author.)

The substance of the Official Medical Reports upon the Epidemic called Cholera, which prevailed among the poor at Dantzick, between the end of May and the first part of September, 1831, as transmitted to their Lordships; being an Analysis of the said Epidemic Disease in that City, founded upon actual Observation and accurate Inquiry; with important and well-authenticated Facts relative to the same disease, as it prevailed among the poor in other parts of the north of Europe. By JOHN HAMETT, M. D. London, 1832. (From the author, through Dr. ASHBEL SMITH, of North Carolina.)

A Lecture delivered to the Medical Class of the University of Virginia, at the conclusion of the Course, and on the occasion of his leaving the Institution. By ROBLEY DUNGLISON, M. D. Professor of Physiology, Pathology, Obstetrics, and Medical Jurisprudence in the University of Virginia. July 9th, 1833. Published by the Class. Charlottesville, 1833. (From the author.)

The Philosophy of Medicine, deduced from a Series of Self-evident Proposi-

tions, developing Self-evident Principles for illustrating the Medical Sciences to Intuitive Demonstration. By EZEKIEL WEBB, M. D. of Mobile, Alabama. Philadelphia, 1833. (From the author.)

A Lecture on some of the Diseases of a Literary Life. Delivered before the American Institute, August 23d, 1832. By GEORGE HAYWARD, M. D. Boston, 1833. (From the author.)

Method of using the Chloride of Soda, either for Dressing ill-conditioned Sores, or as a Means of Purifying unhealthy Places, and of Disinfecting Animal Substances. By A. G. LABARRAQUE, Chev. Leg. of Honour, &c. Translated by JACOB PORTER. Second edition. Northampton, 1833. (From the Translator.)

Proceedings of the President and Fellows of the Connecticut Medical Society, in Convention, May, 1833. New Haven, 1833. (From the society.)

A Practical Treatise on the Diseases of the Eye. By WILLIAM MACKENZIE, Lecturer on the Eye in the University of Glasgow, and one of the Surgeons of the Glasgow Eye Infirmary. Boston, 1833. Carter, Hendee & Co. (From the publishers.)

Pétition Adressée a la Chambre des Députés. Par N. CHERVIN, Membre Titulaire de l'Académie Royale de Médecine, à l'effet d'obtenir que les résultats de l'enquête officielle que le Gouvernement a fait faire aux Etats-Unis d'Amérique, sur la conduite de ce médecin, sur son caractère moral et sur la question de la contagion ou de la non-contagion de la fièvre jaune, soient publiés aux frais de l'administration, ainsi que les lettres ministérielles qui ont provoqué cette enquête; et surtout pour appeler l'attention de la Chambre sur la nécéssité d'une prompte réforme dans notre système et notre législation sanitaires; Suivie des Pièces a L'appui, et du Rapport fait a la Chambre, par M. DE MONTEPIN. Paris, 1833. (From the author, through Dr. LA ROCHE.)

Journal Universel et Hebdomadaire. Tom. X. Nos. 123 to 126. (In exchange.)

Annales de la Médecine Physiologique. October, 1832. (In exchange.)

Revue Médicale. December, 1832. (In exchange.)

Archives Générales. December, 1832. (In exchange.)

Wissenschaftliche Annalen der Gesammten Heilkunde. Herausgegeben von Dr. J. F. C. HECKER, Professor der Heilkunde an der Friedrich-Wilhelms-Universität zu Berlin. February, 1833. (In exchange.)

London Medical and Surgical Journal, for March, April, and May, 1833. (In exchange.)

London Medical and Physical Journal, for March, April, and May, 1833. (In exchange.)

The Edinburgh Medical and Surgical Journal, for April, 1833. (In exchange.)

The Medico-Chirurgical Review, for April, 1833. (In exchange.)

The London Medical Gazette, for March, April, and May, 1833. (In exchange.)

The Western Journal of the Medical and Physical Sciences, for April, 1833. (In exchange.)

The Western Medical Gazette. Vol. I. Nos. 10, 11. (In exchange.)

The Boston Medical Magazine. No. 11. (In exchange.)

For the gratification of our contributors we present references to the works received during the last three months, in which their communications are noticed.

Professor MOTT will find his Case of Extirpation of the Parotid noticed in the Archives Générales for November, 1832, in the Transylvania Journal for July, 1832, in the London Medical Gazette for January, 1833, and in the Lancet for February, 1833.

Professor SEWALL's Case of Diseased Spine is copied into the Gazette Medicale for December, 1832.

Professor HORNER's Case of Ligature of common Carotid in a case of attempted Suicide, is copied into the Boston Medical and Surgical Journal for December 12th, 1832, and in the London Medical Gazette for 16th March, 1833. His Case of Ozena cured by Chloride of Lime is noticed in the Western Journal of Medical and Physical Sciences.

Dr. WELLS' Cases are noticed in the Transylvania Journal for July, 1832, in the London Medical Gazette for January and February, 1833, in Lancet for February, 1833, and in the London Medical and Physical Journal for March, 1833.

Dr. ATLEE's Paper on the Use of Prussic Acid in Pertussis, is copied in Gazette Médicale for January, 1833, and in the London Medical and Physical Journal for March, 1833.

Dr. HODGE's Paper on Sedation, is noticed in the Transylvania Journal for July, 1832.

Dr. MITCHELL's Experiments on Arsenic are noticed in the Transylvania Journal for July 1832, and his case of Spasm relieved by Ligature, is copied into the London Medical and Physical Journal for April, 1833.

Dr. PICTON's Remarks on the Exclusion of Light for preventing Pitting in Variola, are noticed in the London Medical Gazette for January, 1833, in the Lancet for December, 1832, in the Gazette Médicale for February, 1833, and in the Archives Générales for November, 1832.

Dr. YOUNG's Paper on the Use of Cimicifuga Racemosa in Chorea, is copied into the Gazette Médicale for December, 1832, and into the Archives Générales for November, 1832.

Dr. WILLIAMS' Remarks on Malt Poultice, are noticed in the London Medical and Physical Journal for March, 1833.

Dr. HALL's Case of Ligature of External Iliac, is noticed in the London Medical and Surgical Journal for February, and the London Medical and Physical Journal for May, 1833.

Dr. PITCHER's Case of Wound in the Abdomen, is noticed in the Transylvania Journal for July, 1832.

Dr. TURNBULL's Case of Spinal Irritation, is noticed in the Boston Medical and Surgical Journal for January, 1833.

Dr. HILDRETH's case of dropsy, is copied into the Boston Medical and Surgical Journal.

Dr. BARTON's Cases Illustrative of the Physiological Practice in the Diseases of Louisiana, are copied into the Transylvania Journal for January, 1833.

Dr. PERRINE's Case in which a Large dose of Arsenic was taken, is noticed in the London Medical Gazette for March, 1833, and in the Transylvania Journal for January, 1833.

Dr. LE BEAU's Case of Premature Puberty, is noticed in the Lancet for March, 1833, in the Transylvania Journal for January, 1833, and in the Gazette Medicale for 1832.

Dr. SKINNER's Case of Cholera Infantum cured by Nitrate of Silver, is copied in the Transylvania Journal for July, 1833.

Dr. MUNSEL's Remarks on Galvanism, are copied in the London Lancet for March, 1833.

Dr. EICKHORN's Case in which a Large Dose of Camphor was taken, is noticed in the London Medical Gazette for March, and the London Medical and Surgical Journal for May, 1833.

Dr. WARD's Case of Vagitus Uterinus, is copied in the London Medical and Surgical Journal, for May last.

Authors of new medical books, desirous of having them reviewed or noticed in this Journal at the earliest opportunity, are invited to transmit to the *Editor* a copy as soon after publication as convenient, when they will receive prompt attention. Under ordinary circumstances, very considerable delay is caused by the circuitous routes through which they are received.

Papers intended for publication, should be sent, *free of expense*, as early after the appearance of the Journal as possible, in order to be in time for the ensuing number. Such communications should be addressed to "CAREY, LEA & BLANCHARD, Philadelphia, for the Editor of the American Journal of the Medical Sciences."

All letters on the *business* of the Journal to be addressed exclusively to the publishers.

CONTENTS.

ORIGINAL COMMUNICATIONS.

ESSAYS.

Art.		Page.
I.	Lecture on Cholera Morbus. By N. Chapman, M. D. Professor of the Institutes and Practice of Physic and Clinical Practice in the University of Pennsylvania	293
II.	Facts and Observations relative to the Disease commonly called Yellow Fever, as it Appeared on Board the United States' Ship Hornet in 1823, the United States' Schooner Grampus in 1829, and at the United States' Naval Hospital, Pensacola, in the Cases received from the Peacock, in 1830. By Samuel Barrington, M. D. Assistant Surgeon U. S. Navy	307
III.	Cases and Observations regarding Puerperal Fever, as it Prevailed in the Pennsylvania Hospital in February and March, 1833. By Hugh L. Hodge, M. D. one of the Physicians of that Charity	325
IV.	Notice of an Experiment on the Vascular Connexion of Mother and Fœtus. By W. E. Horner, M. D. Professor of Anatomy in the University of Pennsylvania	353
V.	Case of Aneurism of the Right Subclavian Artery, in which that Vessel was Tied within the Scaleni Muscles. By Valentine Mott, M. D. Professor of Pathological and Operative Surgery in the College of Physicians and Surgeons, New York	354
VI.	Further Cases and Observations relative to Rheumatism. By J. K. Mitchell, M. D. one of the Physicians of the Pennsylvania Hospital	360
VII.	Case of Intussusception. By Samuel Jackson, M. D. Assistant to the Professor of the Institutes and Practice of Medicine and Clinical Practice in the University of Pennsylvania	372
VIII.	On the Apocynum androsæmifolium. By William Zollickoffer, M. D., F. C. P., late Lecturer on Botany, Materia Medica, and Toxicology, &c. &c.	378
IX.	Case of Shoulder and Arm Presentation, in which Death took place from a Detachment of the Placenta. By John M. B. Harden, M. D. of Liberty County, Georgia	380
X.	Sketch of a Remarkable Case of Splenitis, supposed during Life to be Scirrhous Ovarium. By William Markley Lee, M. D. of Kerslaid, S. C.	383
XI.	On the Pathology and Therapeutics of Cholera Maligna. By Hugh L. Hodge, M. D. one of the Physicians of the Alms-house Infirmary, and late Physician to the City Cholera Hospital, No. 4	386

REVIEWS.

XII. Tablas Necrologicas del Cholera-Morbus en la Ciudad de la Habana y sus Arrabales Formadas a escitacion del Escmo. Senor Intendente de Ejercito Conde di Villanueva. Por Don Ramon de la Sagra. Habana, 1833 - - - - - - - - - - - - - - - 433

XIII. Anatomie Pathologique du Corps Humain, ou Descriptions, avec Figures Lithographiées et Coloriées, des Diverses alterations Morbides dont le Corps Humain est susceptible. Par J. Cruveilhier, Professor d'Anatomie, a la Faculté de Médecine de Paris; Médecin de la Maison Royale de Santé; Chevalier de la Légion d'Honneur; Membre de la Académie Royale de Médecine; Président perpétuel de la Société Anatomique, &c. Quatorzième Livraison, et 14, liv. bis. Maladies de l'estomac et des Intestins. (Cholera Morbus.) pp. 52, folio. Plates 5 - 442

BIBLIOGRAPHICAL NOTICES.

XIV. The Substance of the Official Medical Reports upon the Epidemic called Cholera, which prevailed among the poor at Dantzick, between the end of May and the first part of September, 1831, as transmitted to their Lordships, (of the Privy Council,) being an Analysis of the said Epidemic Disease in that City, founded upon actual Observation and accurate Inquiry, &c. By John Hamett, M. D. London, 1832. pp. 189 457

XV. An Essay on Epidemics as they appeared in Duchess county, from 1809 to 1825; also a Paper on Diseases of the Jaw Bones, with an Appendix, containing an Account of the Epidemic Cholera, as it appeared in 1832. By Hunter Sherrill, M. D. New York, 1832. pp. 184 & 38. 8vo. 463

XVI. The Anatomy and Physiology of the Organ of Hearing, &c. By David Tod, Member of the Royal College of Surgeons. Octavo. pp. 147. London, 1832 - - - - - - - - - - - - - - 468

XVII. Phrenology in Connexion with the Study of Physiognomy. By J. G. Spurzheim, M. D. of the Universities of Vienna and Paris, and Licentiate of the Royal College of Physicians of London. Illustration of Characters, with thirty-five plates. First Am. ed. improved. To which is prefixed a Biography of the author. By Nahum Capen. Boston, 1833 473

XVIII. Lectures on the Diseases of the Urinary Organs. By B. C. Brodie, F. R. S. Sergeant-Surgeon to the King, and Surgeon to St. George's Hospital - - - - - - - - - - - - - 477

XIX. Elementa Medicinæ Forensis, Politiæ Medicæ, et Hygienes; ad usum Subalpinorum. Taurini, 1832. Vol. IV. 8vo. - - - - - 480

XX. Pathological Anatomy. Illustrations of the Elementary Forms of Disease. By Robert Carswell, M. D. Professor of Pathological Anatomy in the University of London, &c. &c. Fasciculus first, Tubercle. London, 1833 - - - - - - - - - - - - - - 483

XXI. Elements of Chemical Philosophy on the Basis of Reid, Comprising the Rudiments of that Science, and the Requisite Experimental Illustrations, with plates and Diagrams. By Thomas D. Mitchell, M. D. Professor of Chemistry and Pharmacy in the Medical College of Ohio, &c. 484

XXII. Intorno alla Natura del Miasma Cholèroso Asiatico congetture di B. M. Trasmesse alla Società Medico-Chirurgica di Berlino. Lucca, 1832.

Conjecture relative to the Nature of the Miasma productive of Asiatic Cholera. By B. M. &c. - - - - - - - - - - - 490

XXIII. Pétition Adressée a la Chambre des Députés. Par N. Chervin, Membre Titulaire de l'Académie Royale de Médecine, à l'effet d'obtenir que les résultats de l'enquête officielle que le Gouvernement a fait faire aux Etats-Unis d'Amérique, sur la conduite de ce médecin, sur son caractère moral et sur la question de la contagion ou de la non-contagion de la fièvre jaune, soient publiés aux frais de l'administration, ainsi que les lettres ministérielles qui ont provoqué cette enquête; et surtout pour appeler l'attention de la Chambre sur la nécessité d'une prompte réforme dans notre système et notre législation sanitaires; Suivie des Pièces a L'appui, et du Rapport fait a la Chambre, par M. De Montepin. Paris, 1833 - - - - - - - - - - - - - - - 498

XXIV. The Cyclopædia of Practical Medicine and Surgery, a Digest of Medical Literature. Edited by Isaac Hays, M. D. Part I. Philadelphia, Carey, Lea & Blanchard. July, 1833 - - - - - - - - 502

XXV. A Practical Treatise on the Diseases of the Eye. By William Mackenzie, Lecturer on the Eye in the University of Glasgow, and one of the Surgeons to the Glasgow Eye Infirmary. From the last London edition. Boston, Carter, Hendee & Co. 1833. pp. 719. 8vo. - - 504

QUARTERLY PERISCOPE.

FOREIGN INTELLIGENCE.

Physiology.

1. Case of Preternatural Lactation. By Dr. Kennedy - - - Page 505

2. Doubling of Images by a single Eye. By M. Prevost - - Page 506

Pathology.

3. Aromatic Smell Exhaled from the Surface of the Skin of the Forearm. By Dr. Speranza 506

4. Accumulation of Fæces in the Colon. By Professor Graves 507

5. Roseolous Eruption, caused by the Use of Copaiba and Cubebs. By M. Velpeau - - - *ib.*

6. New Theory of the Sounds of the Heart. By Dr. Rouanet 508

7. Spontaneous Ruptures of the Heart - - - - - 508

8. Curious Malformation and Organic Disease of the Heart - 510

9. Case of Hydatid Cyst within the Cranium. By H. Montault *ib.*

10. Ulcer of the Stomach Cicatrized. By Dr. Graves - 515

Materia Medica.

11. On Ergot. By M. Boetcher — 515
12. On Radix Caincæ. By Dr. Wolff — *ib.*
13. On Ergot. By MM. Trousseau and Maisonneuve — 515
14. Effects of large doses of Quinine. By M. Scott — 516

Practice of Medicine.

15. On Hysteria. By Professor Chiappa — 517
16. Anthelmintic Emulsion — *ib.*
17. On Infantile Convulsions. By Professor Graves — 518
18. Colliquative Diarrhœa. By Dr. Graves — 520
19. On the Employment of the Hydro-ferrocyanate of Quinine in Intermittent Fevers. By G. Cerioli, M. D. — 521
20. On the Employment of the Chloride of Lime in the Treatment of Psora. By Professor Fantonetti — 523
21. On Chronic Bronchitis. By Professor Graves — 524
22. On Rachialgia. By M. Andral — *ib.*
23. Case of Gastro-enteritis simulating Epidemic Cholera. By Professor Broussais — 525

Ophthalmology.

24. Hemeralopia, or Night Blindness — 526
25. Method of Applying Nitrate of Silver to Ulcers of the Cornea — 526

Surgery.

26. Chloride of Soda in Burns, Scalds, and Black Eyes. By Mr. Holt — 527
27. Case of Œdematous Angina successfully treated by Tracheotomy. By Baron Dupuytren — *ib.*
28. On Aneurisms. By M. Breschet — 529
29. Wound of the Heart — 531
30. Aneurism by Anastomosis of the Temporal Artery — 532
31. Aneurism of the Thyroid Gland, cured by Ligature of the two Thyroid Arteries — 533
32. Case of Ruptured Bladder. By M. Dupuytren — 535
33. New Hemostatic — 535
34. Prolapsus Ani. By Baron Dupuytren — 538
35. Amputation at the Coxo-femoral Articulation. By M. Blandin — 539
36. Extirpation of a Tumour weighing seven pounds developed in the Upper Internal Portion of the Thigh, followed by Death. By M. Roux — 540
37. Cases of Diffused Inflammation after Bleeding in the Foot — 541
38. Two Cases of Hernia, in which the Operation was performed, although there were no External Swellings — 542

Cholera.

39. On the Use of Cold Water in Cholera. By Dr. Hardwicke Shute — 543
40. Cholera without Intestinal Discharges. By M. Girardin — 546
41. Saline Injections in Cholera — 546
42. Influence of Putrid Exhalations upon Cholera. By M. Double — 547

Chemistry.

43. Aricine, Quinine, Cinchonine. By M. Pelletier — 547
44. Chemical Analysis of Ergot. By Mr. Wiggers — 548
45. Phosphuretted Hydrogen. By Dr. Rose — 548
46. On certain Phenomena produced by Capillary Action. By Dr. S. Magnus — *ib.*

AMERICAN INTELLIGENCE.

PAGE.

A Case of Compound Camerated Fracture of the Cranium, successfully Treated by the Removal of three pieces of the External Table of the Bone. By Paul F. Eve, M. D. Professor of Surgery in the Georgia Medical College - - - - - 549

On the Use of Ice and Chloride of Soda in Cynanche Maligna. By Samuel Jackson, M. D. of Northumberland, Pennsylvania. [Communicated in a letter to the Editor.] - - - - - 550

Case of Dislocation and Extraction of the Astragalus. By William A. Gillespie, M.D. of Ellisville, Virginia - - - - - 552

On the Efficacy of the Cold Dash in Nervous and Convulsive Diseases. By Charles A. Lee, M.D. of New York - - - - 553

Case of Urinary Calculus successfully treated by Lithotrity. By P. S. Spencer, M. D. of Petersburg, Virginia - - - - 554

On the Use of Calomel in Pruritus. By Philip Younge, M. D. of Thomaston, Upton County, Georgia 555

Extraction of a Metallic Spark from the Anterior Chamber of the Eye. By T. D. Mutter, M. D. *ib.*

Dr. Hosack's Memoir on Staphyloraphy - - - - - 556

Dr. Hayward's Lecture on some of the Diseases of a Literary Life - - - - - - *ib.*

Plate of the Fœtal Circulation, with References, by Wm. E. Horner, M. D. Professor of Anatomy - - - - - - *ib.*

Manec's Plate of the Cerebro-spinal Axis - - - - - *ib.*

Study of Anatomy Legalized in Connecticut - - - - *ib.*

INDEX - - - - - - 557

ADVERTISEMENTS - - - 561

THE

AMERICAN JOURNAL

OF THE

MEDICAL SCIENCES.

ART. I. *Lecture on Cholera Morbus.* By N. CHAPMAN, M. D. Professor of the Institutes and Practice of Physic and Clinical Practice in the University of Pennsylvania.

THE ensuing article I am induced to submit to the press, to show the close analogy of our own indigenous cholera, in its more violent character, to the late epidemic form of the disease. On the irruption of this horrible pestilence, and the same opinion seems still to be held by many, it was deemed to be entirely a new disease, peculiar and distinctive in its nature, its symptoms, and treatment. Excepting some slight modifications, always impressed on disease by an epidemic influence, I think it will appear, that they are essentially the same in these respects, and perhaps, by this publication, I may serve in a degree, to correct an erroneous view hastily adopted, and now too commonly entertained. The article is a lecture which I have delivered every season for the last twenty years, as a part of a course on the practice of physic, and now present it with the alterations or additions only, which I have taken care to designate. That such is the fact, I appeal to those of my class, who have notes of the lecture, and also to the recollection of Drs. MIFFLIN and MARTIN, who were attached to the cholera hospital under my charge, to whom it was read on the first breaking out of the epidemic cholera in this city. Could I with fidelity to my pledge, have revised the lecture, it might easily have been improved, as well in the style, as some of its doctrines, which latter in several particulars, I have been led to change, by more am-

ple observations derived from the position I occupied during the visitation of malignant cholera among us. The next number of this Journal will contain a communication from me on that disease.

Cholera Morbus.

This disease has been as inelegantly as inappropriately named, the term cholera morbus being formed from a mixture of the Greek and Latin languages—χολὴ, bile, and ῥέω, to *flow*, and *morbus* disease, meaning strictly a bile flux. It will hereafter be seen, that an excess of bile is a very rare incident of the affection, never occurring in its severer forms, and that the discharge, whatever it may be, must be deemed merely a symptom of a pathological condition, of which this appellation is very inaptly expressive. Correctly, I think, it may be derived, as indeed it was by Trallian, from the Greek χολὰς and ῥεω, indicating that the discharge is excerned from the intestines, rather than secreted by the liver. Thus deduced, a designation at least might be formed more justly significant, of one of the most characteristic features of the disease. But objectionable as the received title is, I am afraid it is too firmly fixed by usage now to be changed, and I shall be compelled to retain it.

Cholera morbus appears to have been recognised by our most ancient writers. There are frequent allusions to it by Hippocrates and Galen, and it is fully and faithfully described by Cœlius Aurelianus, Paulus Ægineta, and especially by Aretæus.

No disease varies more in degree of violence than the one now under review. An attack of it usually comes on suddenly, or with little or no premonition. The earliest affections in most instances, perhaps, are soreness, and distention more or less over the whole abdomen, though particularly felt at the epigastrium, with a sense of fulness, tensive uneasiness and oppression in that position, attended by borborygmus and a twisting colicky pain about the umbilicus—then ejections of the ordinary contents of the stomach, mixed with a thin watery fluid, or ropy mucus, occasionally tinged by bile, or more probably, by some morbid secretion of the primæ viæ supposed to be bile, of different hues, accompanied by cramps of the abdominal muscles, as well as those of the limbs, especially of the calf of the leg—and there is at the same time pain in the back, which I have seen to be excruciating. The vomiting is soon followed by copious discharges from the bowels, at first of a thin fluid in which fæcal matter is dissolved, and afterwards the evacuations each way are essentially of the same character and aspect.

Contradictory as it may be to a common opinion, I do not believe, except in very slight attacks, that bile is ever evacuated, or only in

the very beginning, prior to the establishment of the case, or subsequently, when convalescence is about to take place. The accounts to the contrary are by writers who have delineated the disease as it usually prevails in the temperate climates of Europe, probably in the mildest character of which it is susceptible.

During the intervals of vomiting, nausea is most harassing, the thirst intense, with an indescribable wretchedness about the epigastric and precordial regions. As the case proceeds so do the evacuations upwards and downwards more frequently recur, and the cramps and spasms are correspondently exasperated, in some instances reaching to so tremendous a height, that I have seen the trunk rendered rigid, the fingers so clenched as not easily to be relaxed, and the extremities otherwise variously distorted, constituting on the whole a tetanoid condition. Great weakness, with a feeling of exhaustion from emptiness, is complained of in the interval of the paroxysms—and occasionally confusion of head, noises in the ears, or partial deafness are experienced.

The pulse, which had been throughout feeble, henceforward becomes still more so, and with an increased depression of general strength, there are, an exceedingly cold, damp, collapsed surface, more especially of the extremities—a haggard countenance—burning in the stomach or at the umbilicus—eager desire for cold drinks—the tongue however moist, white or milky—the pukings and purgings even more frequent and copious, consisting of a fluid resembling greasy or dirty water, sometimes darker, and floculose like coffee-grounds, or the settlings of port wine—with scanty or suppressed urinary secretion.

This condition cannot endure long, and hereafter there is a rapid sinking manifested by some remission of the preceding affections, with a nearer approach to exhaustion—the pulse tremulous, thready, or hardly perceptible—still, however, extreme jactitation continues—sometimes there is muttering delirium, or with a full retention of the senses—a low, stammering, sepulchral voice—the skin dewy and of a corpsy coldness—lividness of countenance, and of the fingers, the nails particularly—impeded, anxious respiration—singultus—sunken eyes—hollow cheeks—purple or pallid shrivelled lips, &c. &c.*

* This account corresponds in so many of its features with that given of the recent malignant cholera, that it might be supposed to be copied from it. But it was written long before I had any knowledge of that epidemic, and is a delineation of our own indigenous disease as I have seen it myself. There is not a symptom mentioned, which may not be found in the descriptions of cholera by the olden authorities, of which a very excellent digest is contained in James' Medical Dictionary. The violence of the cramps and spasms, the contractions

It is not to be supposed, from the foregoing narrative, that cholera always exhibits so frightful an aspect. Like other diseases, it has, as previously intimated, its gradations, and I have described one of its most violent forms, though even such is so frequent in our climate, either originally, or made so by neglect, or ill management, that I deemed it proper to direct attention to it.

In its more ordinary presentations, it comes on with sickness of stomach, flatulence, some of the symptoms of colic, then pukings mostly of indigested aliment, sometimes with bile, though more commonly without it, soon followed by purgings, of some watery fluid, which is also vomited—cold, damp skin—weak pulse—cramps always of some portion of the alimentary tube, and occasionally of the external muscles. Even this comparatively mild case, may however, when badly treated, speedily degenerate into a state as alarming as the graver form of the disease which I have described.

Cholera is incident chiefly to close, sultry, autumnal weather, occurring however sporadically, at all seasons, and in every climate. To certain positions it would seem endemial from its common prevalence, sometimes in our foggy marshy districts, though more especially to portions of the Indian Peninsula, where it almost constantly exists to a considerable extent, denominated by the French settlers in that section of country, *mort de chien.*

Breaking out under such circumstances, it seems probable, that it is caused like bilious colic, and the other nearly allied affections, by the influence of paludal exhalations. The effluvia of putrid animal matter are very apt to excite it when concentrated. It has often been induced in persons concerned in the opening of graves, particularly in extensive exhumations—more rarely in those engaged in dissections: we see it occasionally around charnel houses, and similar sources of stench, and it is said to have prevailed in the vicinage of fields of battle, where the dead were left to rot and putrefy.

More generally, however, it may be traced to the sensible qualities of weather, cold or moisture succeeding to heat or dryness, or to an exposure to the sun, or to a draft of air, or to the dampness or coldness of the night, or to sleeping with windows open, or to wearing thin apparel, or entering cellars or similar places, or to whatever,

of the fingers, the tetanoid condition of the body, the lividness of countenance, and of the lips and nails, the cold collapsed surface, the thin aqueous discharges, sometimes resembling the washings of flesh, or of a dark floculose fluid, the haggard emaciated countenance, the altered voice, the embarrassed respiration, the unquenchable thirst, the burning sensations in the stomach, the anxiety and jactitation, are all distinctly noticed.

indeed, checks perspiration. It is also excited by irritating or otherwise offensive ingesta, particularly by crude, unripe fruits, or raw or imperfectly cooked vegetables, or gross animal food—and above all, by the several kinds of shell-fish, especially if tainted by being kept too long—and is very frequently brought on by a debauch either in eating or drinking—sometimes by poisonous matters, the preparations of copper, arsenic, and such like articles—also by harsh emetics or purgatives, inducing hyperemesis, and hypercatharsis, and even by excessive fatigue.

Exasperated passion has moreover induced it, as well as some other mental emotions or perturbations, as the agitations of grief or terror—of the latter of which I once saw an instance in a lady, from the alarm of a supposed burglary at night. Cases, however, of this nature, are comparatively rare, and, perhaps, would not take place at all, were there not a considerable degree of predisposition at the moment.

Cholera may be so pervading as to become an epidemic, and I have known it to be so partially in this city, either preceding or attending autumnal malignant diseases. It was one of the forms of yellow fever, and I met with many instances of it during the late prevalence of pernicious intermittents among us. The same tendency in it is noticed by Sydenham and other writers to an epidemic prevalence. But in 1817 it broke out in India, with a violence and universality of pervadence wholly unexampled, sweeping over immense regions, and destroying annually more than a million of people, as appears from the official reports on the subject, and has not yet ceased—the aggregate of the mortality having already amounted, according to different estimates, from twenty to fifty millions.

[Like the deluge of old, there seems indeed to be no barrier to its progress. Continuing its fell career, from its original position, we have recent intelligence of its having overleaped the mountains of Caucasus,—is now spreading its devastations through the adjacent provinces of Russia, and it is most seriously to be apprehended, that it may diffuse itself throughout Europe. What is to be our fate in regard to it, no one can safely predict. Conformably to the laws of such epidemics, it is not improbable that it may be extended to us, and even still further, so as ultimately the whole world shall be embraced in this calamity. Not more than merely to allude to the narrow boundary which separates, at one point, our continent from that of Europe, the wide ocean itself, that interposes between us, in other parts, may not arrest it. Epidemics not at all dependent for their propagation on contagion, rea-

dily transmissible in other modes, have in many instances, proved common to these, and other remote sections of the globe.

This is a fact which having attracted very little attention, is not generally known. Ever since I have been connected with the profession, we have had a succession of very striking evidence in confirmation of it, and there is much reason to suppose that antecedently it was not otherwise. The yellow fever, the first of such occurrences in my time, prevailed here, and in the peninsula of Europe simultaneously. It had only begun to decline when there broke out an influenza of the most fatal character in France, that travelled over Europe and this country. This was followed, after a few years, by an equally pervading typhoid fever of both regions, called by us spotted fever. It had hardly disappeared, when malignant or pernicious intermittents, and their kindred affections arose, and alike traversed the old and new continent. Contemporaneously, we each had in an equal degree, the variolous disease in its diverse modifications—the former, or intermittents, in warm, and the latter in cold weather. Lastly, they have abroad already the scourge of epidemic cholera, and prudence dictates from this review, that we should be prepared to receive its visitation.]*

As usually happens in regard to new diseases, this epidemic cholera is ascribed in its origin to different causes, as contagion, spoiled rice, marsh miasmata, and other ordinary agencies, utterly inadequate to account for it. The only true explanation is to be sought in an epidemic influence, of the precise nature of which, however, we know nothing with certainty.

Common cholera, though resembling several of the other disorders of the alimentary canal, is still somewhat peculiar, and need not be confounded with these. It may be distinguished from colic, among other respects, by the absence of constipation—and it differs from diarrhœa and dysentery by more severity of spasm, and by the evacuations being peculiar, and for the most part, unmixed with any bilious or bloody matters.

To decide on the issue of a case, is perhaps at all times not easy. Examples of recovery are frequent, in a state, apparently desperate, and of death suddenly taking place when least to be expected. Yet it may be concluded, that the danger is imminent, where the disease continuing, there is extreme reduction of the pulse, with general prostra-

* The above remarks, included within brackets, were introduced into the lecture during the winter session of 1831–2.

tion of strength, short, hurried respiration, coldness of surface, clammy sweats, lividness of the lips or fingers, tumid abdomen, watery, greasy, and especially dark floculose discharges, suppression of urine, hiccup, distressed haggard countenance, and delirium. Even in this condition, with the ill-boding Hippocratic countenance added, I have known the patient to get well.

To entitle us to a favourable prediction, there must be with the subsidence of the cramps of the muscles, and of the turbulent state of the alimentary canal, bilious evacuations, a rising of the pulse, a restoration of temperature, with some genial moisture of the surface, and sweet, undisturbed sleep, to which there is generally a strong tendency in the incipiency of convalescence. Cholera, however, under most circumstances, is a very alarming disease, exacting the greatest vigilance and attention.

In violent attacks of it, we meet with on dissection, the stomach and bowels either exceedingly relaxed, flaccid and pale, or the latter contracted by spasm, or variously convoluted or twisted—sometimes, however, with considerable turgescency of the vessels or phlogosis at certain points, and very often congestion of the liver, and more or less in the abdominal viscera generally. Engorgement of the lungs is not so common—sometimes however to an extent resembling the apoplectic condition of these organs. The brain is also found engorged, and inflamed with occasionally extravasations. Of the state of the spinal marrow I cannot speak, never having examined it, or seen any reports regarding it. But I should presume it to be affected very much as is the brain. The most interesting appearance, perhaps, is that each side of the heart, though especially the right side, contains thick, viscid, black blood, the right loaded with it, pervading indeed in a degree the whole circulation, in every organ and part of the system.

During life, the blood which may be drawn away is often similar, or of a dark, heavy, venous appearance.*

The earliest notion regarding the pathology of this disease, and which indeed seems at present to be entertained by many, was, that it consists only in an excess of biliary secretions. Cholera, which

* To the dissections of my late friend, Dr. Lawrence, I am mainly indebted for the anatomical characters of cholera. Little is recorded on the subject prior to the occurrence of the epidemic form of the disease. His examinations were confined principally, though not exclusively, to the cases of cholera occasionally presented during the prevalence some years ago, of malignant intermittent fever in this neighbourhood, and which were undoubtedly a modification of that disease.

means a flow of bile, is sufficiently expressive of this view. Granting the alleged incontinence of bilious discharge, which, however, cannot be done, it must surely be considered only an effect of some pre-existent hepatic irritation. An allusion has been made to the analogy between this, and some other disturbances of the alimentary tube, and especially bilious colic. The pathology of these two diseases has so much in common, that content with referring generally to what was said of the nature of the latter affection, I have little further to remark. Cholera, though simple in its origin, ultimately becomes a case of considerable complication, arising in the stomach, and thence by a play of sympathies, entangling other parts of the system in disordered action to a wide extent. It is on the central digestive organ that the primary irritation is felt, which spreads ordinarily to the bowels, to the liver, and to the brain, &c. To this conclusion I am led, by the recollection of the causes of the disease, which are impressions on the cutaneous surface, from the variations of weather, speedily transferred to the stomach—or some morbid impingement directly on that viscus by miasmata, by very offensive ingesta, or by intemperance and debauchery. It may be further added, in corroboration of the same view, that the first ejections by vomiting consist merely of the contents of the stomach, or variously coloured mucus, or more watery fluids, and that bile is not thrown up, before the biliary organs are secondarily affected, and not even then, unless the attack is very slight. Being once placed in this state, and only under the circumstances just noticed, the liver is then stimulated to increased efforts, and we have as an effect, the bilious discharges incident sometimes to the case. But in a short time, the energies of the stomach, by which tone and support are afforded to every part of the chylopoïetic system, give way from the peculiar distress which that viscus suffers. The liver, so immediately dependent on it, sharing in this indirect debility, is unable to return the blood which rushes into it, and engorgement of the portal circulation takes place, distinguished by the ordinary symptoms of that condition, and especially the suspension of the hepatic secretory office.

That such is a correct estimate of the pathology of simple cholera seems to be confirmed by the history of the causes of the disease, its symptoms, the phenomena on dissection, and we shall presently see, the method of cure. Conclusive, however, on this point, is the fact, that the disease may at any time, be imitated by certain exasperations of the stomach. Give calomel, tartarized antimony, and gamboge, in large portions, and an artificial cholera morbus is commonly the result. This very prescription was formerly used in this city to

effect copious evacuations, upwards and downwards, in the treatment of what were then called bilious fevers. Even a more striking illustration is supplied in the instance of certain poisons acting on the stomach, where indeed the phenomena are so similar to those of genuine cholera, as sometimes not to be discriminated, as we see in the history of legal proceedings, the ablest medical men not being willing to decide merely from a contemplation of the external physiognomy of the case. As the disease proceeds, however, the gastric irritation being more extensively spread, embracing the entire primæ viæ, there is of course more concentration of blood in the deep-seated vessels, derived at the expense of those of the periphery of the body, and in consequence, a greater degree of inward congestion, and general prostration of power.

Much has been imputed to the peculiar condition of the blood in cholera, which, as is alleged, from its imperfect decarbonization, being rendered unfit to sustain the brain, cerebral energy is impaired, and hence all the actions dependent on it become enfeebled. But whatever may be the influence of such blood, it seems to me quite certain that the change it undergoes is secondary, and that it, and every other link in the ultimate catinated series of events, constituting the disease in its maturity, are referable to the impressions on the stomach, and through it on the ganglionic nerves, and thence to the spinal marrow and brain.

It is only on such an hypothesis that some of the most prominent phenomena of the disease admit of an explanation. The early disturbance of the gastro-intestinal functions, the pain in the back, the violence of the spasms, the confusion of head, all go to show, that the whole nervous system is deeply implicated, and whatever subsequently happens, may readily be conceived to proceed from its derangement. As to the state of the mucous surface of the digestive tube, so immediately concerned in the disease, it is presumable, that it varies in different cases, as well as in the several stages of the same case. There is probably at first merely irritation of the exhalants, to which the copious serous discharges are referable. But subsequently inflammation may ensue, in a greater or less extent, though I should suspect, from the character of the discharges, very rarely of any part of the follicular or criptous structure.

Deducing our practice from the theory I have proposed, it would follow, that the only indication in the commencement to be consulted in the treatment, is the removal of the original gastric irritation. But it sometimes happens that a theory may be perfectly just, and still our practice cannot be a regular or immediate derivation from

it. Though in ophthalmia, inflammation is the essence of the disease, previously to attempting its reduction, the irritant, if such exist in the eye, producing it, must be removed. Thus too, in dropsy of the cavities we are occasionally called upon to evacuate the oppressive effusion, in anticipation of the cure of the pathological condition of which, it is merely an effect. Exactly on the same principle are we compelled sometimes to proceed in cholera. Not a few of the cases of it are induced by such irritating contents of the stomach, that these acting as the immediate, or at all events the aggravating cause, the case will not yield without they are carried off. This is the state of the disease which I shall first consider.

Diluent drinks are here, and indeed under all other circumstances of cholera, very much prescribed. Tepid chamomile tea, or water, or barley water, or weak chicken tea, will sometimes answer in mild cases when copiously drank. This is an old plan of managing cholera morbus, espoused by Sydenham, and from him descended to the present times, and retained pretty much by the weight of his authority. Why the stomach should be deluged with such beverages, instead of being emptied at once by an emetic, I never could learn or comprehend. It is presumable, however, that the practice arose out of an assimilation of the case to that of poisons, a very predominant notion at one period, the fluid being deemed of a very acrimonious and virulent nature. Be this as it may, the effect of the emetic would unquestionably be more prompt and complete. Entertaining this conviction, I very early adopted such a course. Twenty grains of ipecacuanha I usually order, and that its operation be promoted by warm water. The stomach becomes now relieved of the causes of irritation, and sometimes completely tranquillized.

More is done by the emetic, in occasionally overcoming the spasms, and on its secondary and diffusive operation taking place, a centrifugal direction is given, whereby the irritation of the first passages, as well as the deep-seated congestion, are removed. On the restoration of the just balance in the circulation, and the functions dependent on it, the system before prostrate, now emerges from under the load, and we are presented with altogether a case more open and manageable.

Taking this principle to be correct, perhaps I have too narrowly circumscribed the application of emetics, to the disease induced by crapulency, or by other highly offended states of the stomach. My experience, I confess, is not sufficiently extensive under different circumstances, to speak so confidently of the propriety of the practice, though I have tried it successfully in several instances, and can dis-

cern, when duly regulated, no objection to such general extension of it.

Cases however of extreme prostration may occur, in which an emetic might be hazardous, or utterly inadmissible, though such in the beginning of an attack I have rarely or never witnessed.

Nor is it to be supposed that an emetic is always demanded. No offensive matters existing in the stomach, an appeal may be made in most instances without delay, to calm irritation, and subdue the spasmodic pain and turbulence. It is here that the course of treatment can be in strict conformity to the pathological view I have suggested. Combinations, into which opium enters largely, are the most approved remedies. The potash mixture with laudanum, the spirit of camphor, or camphorated emulsion with nitrous acid and laudanum, are greatly prescribed—and perhaps the acetate of lead and opium are deserving of confidence. Laudanum alone, or what answers better, opium, and particularly an old opium pill, I generally prefer, as less apt to be rejected. Calomel in large doses has sometimes answered under such circumstances.

But such may be the degree of gastric irritability, that none of these medicines will be retained, when a recurrence may be had to an anodyne enema. Could we indeed uniformly command an acquiescence in the practice, it were better at once to place the system in this way under an opiate impression, leaving the stomach to repose, or at least released from the annoyance of remedies. Numerous are the instances within my own experience, thus managed by a large anodyne injection at the very onset, which gave me very little further trouble. Defeated in this design, however, the endermic practice with morphia, offers a resource worthy of trial. Great advantage is sometimes attained by a sinapism over the epigastrium, or on each of the lower extremities in this exquisitely irritable state of the stomach, and still more, by an application of cups or leeches to the former position.

Evidence, however, existing of heavy congestion, venesection is to be employed. Let it be remembered, that the pulse in this case is not the only guide. Whatever may be its feebleness, when there is violent pain, and an ordinary degree of constitutional vigour, the lancet may generally be safely urged. This I have sometimes done, the pulse being exceedingly low, and have found it to rise by depletion. It may, I think, be laid down as a rule, without hardly an exception, that in the early stage of all diseases attended by *much pain*, if we find the pulse weak, it ought to be considered as depressed, which is most effectually removed by direct evacuations. Yet,

admitting this to be true, we are, at the same time, in some of these cases, to proceed very circumspectly with the lancet. Either from the system refusing to reäct, or that the general circulation is so emptied by congestions in the great viscera, that blood suddenly and copiously lost would be productive of harm, and might probably extinguish life. We therefore draw it away slowly, watching its effects, and allow time for the vital or recuperative energies to be developed, and come again into play. Detractions of blood are to be deemed appropriate when the stream flows strongly, its colour gradually becoming more florid, and the pulse rising, and assuming greater tone and fulness. The reverse of these indications shows its impropriety, and constitutes an admonition to desist. In doubtful circumstances, where there is an imperfect reäction, it may be more prudent to substitute topical bleeding from some portion of the abdomen, or in preference from the spine, should we suspect irritation in that part, either by the expression of pain in it, or the existence of violent spasms. The loss of blood may, here, be preceded by sinapisms, and by the warm bath, which usually proves very beneficial in cholera, and is particularly suited to the case immediately before us. Not having it however at hand, the vapour bath may be substituted, or hot fomentations applied diffusively over the body with subsequent frictions by warm flannel, and on a favourable condition arising, then, should it seem to be required, venesection or local bleeding may be safely practised, and sometimes to a considerable extent.

Not arrested, the disease will soon reach a stage to demand a decidedly stimulating course of treatment. It is now, should prostration be alarming, that we must recur to sinapisms or blisters, and to apply dry heat, by hot sand bags, or some similar medium, or to rubefacient frictions.

As a vesicatory, the nitric acid is greatly extolled in this case. Two parts of the acid with one of water, are directed to be spread over the part with a feather, or the surface may be rubbed with the mixture, till some sharp pain is induced, when the acid is to be neutralized by a solution of salt of tartar. The cuticle can now be easily detached, and leaves the cutis raw, which may be continued in this state by dressings with some stimulating ointment. The pain of this application we are told is not greater than that from the fly blister, and much more speedily subsides. It is particularly recommended by *quickness* of action, the effect being attained in two or three minutes. May it not however, like a severe burn, completely destroy the vitality of the part, and thus prove useless or even mischievous?

In regard to internal remedies in this sinking or collapsed condition, those chiefly resorted to are of the class of diffusible stimulants. The liquor ammoniæ, a solution of camphor in ether, the spirit of turpentine, the tincture of capsicum, hot toddy, or what is better, *mint julep.* But while directing any of these articles, opium, which is our sheet anchor, ought to be continued, should it not be forbidden by cerebral disturbance.

Lately two new expedients have been suggested, more particularly with a view to the suspension of the vehement retchings, and attendant spasms, which seem to have some claims to attention. The first is an application of tourniquets to the arm and thigh of opposite sides. This I have tried and with decided advantage, so far as regards the suppression of the cramps of the muscles of the extremities. The second consists in fastening the patient down on a board in a horizontal position, with straps so that he cannot move. The abdominal muscles, and other auxiliary powers in vomiting, being thus suspended, then to administer laudanum and other remedies, which are represented always to be retained to the full effect intended.

As soon as the stomach becomes retentive of such articles, purgatives are usually required, and among which calomel, on several accounts, is to be preferred. Notwithstanding the common impression to the contrary, it is in a large dose of a less irritating tendency than perhaps any other, and is peculiarly calculated to emulge or unload congested organs. But when the case is of a milder character, castor oil, or any other laxative, will be adequate, and may be substituted. Evacuations having been procured, should the secretions seem to be deficient or vitiated, it will then be proper to recur to calomel in small doses alone, or with a modicum of opium, with a view to their promotion or rectification.

Of regimen in this disease little need be said. The stomach is in such a state as to preclude nourishment. But so great is the thirst that some drink must be provided. The thin vegetable mucilages are usually directed in the practice of this city. Cold lemonade, even icy cold, however, is far more grateful, and may be allowed. The late Professor Kuhn thought it so salutary, that he prescribed it liberally as a remedy. It should be made with boiling water, and then permitted to cool. There is no objection to cold water in small portions, or small pieces of ice itself held in the mouth as mentioned on a preceding occasion.* As soon as the stomach becomes retentive

* The allowance of cold drinks, and of ice in cholera, has been claimed as an innovation first introduced into the treatment of the recent epidemic form of the disease. But the practice is very old, and was familiar to me. The stomach

of food, the most appropriate is thin chicken water, or some similar article.

By pursuing the practice I have inculcated, a large majority of the cases of the disease, however violent, will submit. But occasionally we have to encounter some tremendous attacks of it, in which all our skill and resources are required. Cholera I have known to terminate fatally, such may be the vehemence and rapidity of its career, in a very few hours. These are its malignant states, occurring for the most part during the prevalence of some peculiar distemperature of the atmosphere. Even, however, in ordinary times, it will in some instances run its course in twenty-four hours, or half the period.

In the propriety of the practice I have recommended, I am the more confirmed, since, after considerable fluctuation, it was admitted to be the most successful in the dreadful epidemic of this nature in the eastern world, to which I have alluded. Copious losses of blood by venesection chiefly, and the liberal use of calomel with opium, according to the official reports, were the chief remedies, in which confidence was ultimately reposed.

Common cholera is extremely liable to recurrence, and to guard against which, all the exciting causes should be avoided—especially an exposure to the sun or night air, or in any way to check perspiration, cold feet, an excess in eating or drinking, or improper articles of food, any undue exercise, intemperate indulgence of passion.

An attention to the bowels is also demanded. These are to be kept in a soluble state, by the use of magnesia or rhubarb if required, and with a view to restore tone to the alimentary canal the bitters may be taken, as quassia or columbo. The elixir vitriol has also been recommended. Wearing of flannel should not be overlooked in the regulation of the prophylactic measures. But where we find a very strong predisposition to the disease, so that it is readily excited by slight causes, we may be persuaded that the primæ viæ, or hepatic system, has acquired a morbid susceptibility from an essentially deranged condition, which ought to be carefully ascertained and removed.

having been previously evacuated by frequent draughts of tepid water, it is recommended by Aretæus to give a quarter of a pint of cold water to check the purging, to cool the ardent heat of the stomach, and to abate the thirst, and this he advises to be repeated as often as the patient throws up what he drinks. Many since Aretæus have extolled the remedy, and to use the language of a writer on the subject, "for it cools, blunts acrimony, and restores the tone of the parts. In this country it may be safely given, if large draughts at a time are avoided."—*Parr's Medical Dictionary.*

ART. II. *Facts and Observations relative to the Disease commonly called Yellow Fever; as it Appeared on Board the United States' Ship Hornet in* 1828, *the United States' Schooner Grampus in* 1829, *and at the United States' Naval Hospital, Pensacola, in the Cases received from the Peacock, in* 1830. By SAMUEL BARRINGTON, M. D. Assistant Surgeon U. S. Navy.

IT was my intention, nearly two years ago, to have presented these remarks for publication, having then recently returned from the Pensacola station; but about that time, orders to one of the ships of the West India squadron induced me to postpone my design until after my return: supposing that, by another cruise in a topical climate, my observations would probably be more extended. The Erie, however, in which I last sailed, had the good fortune to perform her cruise and arrive in the United States, without having had a single case of malignant fever.

I have to regret that, in consequence of the medical journal of the Hornet having shared the fate of that unfortunate vessel, I have been obliged to trust much to memory and the few private notes taken on board, in the account of the disease as it occurred in that ship. The journal of the Grampus, (of which I was then surgeon,) is now in my possession; and also an exact copy from the journal of the hospital at Pensacola, kept by me when on duty there in 1830, containing the cases from the Peacock.

The disease made its appearance on board the Hornet while lying at Sacrificios, a small island about three miles from Vera Cruz, (Mexico,) in September, 1828. We had been there at anchor twenty-six days when the first decided case occurred. There was no epidemic in the city of Vera Cruz, excepting the Dengue; nor was the fever prevalent at any place where we had touched on our cruise. During the two months previous to this time, the weather had been clear and oppressively warm, with very little rain: the thermometer averaging 87° at noon; at no time above 90° nor below 79°. It was kept on the berth deck, immediately under the main hatch, in as cool a situation as any between decks. In the winter of 1827 the Hornet had undergone extensive repairs. She was "salted" and consequently very damp; the moisture collecting in drops on the beams, &c. when the atmosphere was charged with vapour.* When

* The sickness in the frigate Brandywine in her recent cruise to the West Indies, was attributed in a great measure to this cause, by Dr. W. P. C. Barton, her surgeon. See his "Hints," &c.

she was "broken out" at New York after her return in 1828, great quantities of mud and other filth were taken from her hold; and in her timbers and lower works was discovered a considerable collection of chips and shavings in a putrid state, which had fallen there during repair. The bilge water and smell from the hold in this ship were exceedingly unpleasant.

In the Grampus the first case occurred in July, 1829, while cruising off Cuba. The duty imposed upon this vessel caused her to be frequently in the harbours of Havana and Matanzas. For six or eight weeks before, and in the progress of the sickness, the thermometer ranged from 77° to 89°, averaging about 84°. The crew were necessarily much exposed night and day, and had often to lie down in their wet clothes and on a wet deck. This vessel was remarkable for her uniform neatness and cleanly appearance throughout. The bilge water smell was seldom perceived: the water coming out of the pumps perfectly clear.

How the Peacock was in these respects I have been unable to learn with satisfaction; I am informed that she was damp, from being salted. She was also "filled in," consequently without limbers; had a gun deck and a spar deck; being thus constructed for the Polar expedition. Before she arrived at Pensacola in August, 1830, there had been two cases of fever; both of which proved fatal. This ship had been once or twice at Matanzas, and several times at Havana, when the cables become coated with a dark offensive mud, of which they cannot always be completely cleared before being stowed away.

Of the causes of this disease, and the circumstances which are supposed to favour its origin, much difference of opinion has always existed; and as our evidence on this subject is mostly of a negative character, it is not probable that medical men ever will agree. Whether the remote cause be miasmata or animalculæ, it is not for me to discuss. With respect to the predisposing and exciting causes there is also much diversity of sentiment. In "lunar influence," to which so much importance has been attached by Dr. Caldwell, (see Prize Essay in No. XVI. of this Journal, for August, 1831,) I have not the smallest faith. Patients were equally attacked at all periods of the moon, and the greater or less intensity of the disease appeared to be regulated by the temperature and changes of the weather. There is a strong belief with many that sleeping in the moonshine is at all times highly dangerous. In every vessel in which I have sailed, nothing was more common than to see the men sling their hammocks between the guns, and in other places on the spar deck, in warm nights, exposed for hours to the rays of the moon without the slight-

est ill effects. I have been particular in noticing and remarking to others this repeated exposure with impunity to "lunar influence." The following facts will illustrate the connexion between the degree of temperature and the progress of this disease. When the Hornet arrived at the Navy Yard, Pensacola, (in latitude 30° 19′ N.) from Vera Cruz, (October 29th,) the thermometer had fallen to 69°. While here, (two days,) we had but two new cases. After leaving Pensacola, on our way to New York, no one was attacked until we got into the latitude of the southern capes of Florida, (about 24° 30′;) while here the temperature varied from 78° to 82°, and we had an increase of seven new cases to our sick list, two on the 5th, and five on the 7th November, and one more, being the last, on the 8th. From this time as we increased our northern latitude, and the thermometer gradually descended towards the freezing point, we had not another case, and those already attacked rapidly convalesced.

Of *prophylactics*, (in the comprehensive sense of the term,) a few words may be said. Cleanliness is among the most important; not only as applied to our persons, but also to surrounding objects, especially on ship-board. The bellows, or air-pump, of Commodore Barron, is a valuable contrivance for the displacement of foul, and introduction of fresh air below decks. It was not used in the Hornet while I was attached to her, nor in the Grampus or Peacock. On board the Erie, in her late cruise, it was constantly in operation. The chloride of lime is an important agent in purifying places inaccessible by the scrubbing-brush and holy-stone, and destroying the noxious effluvia of crowded apartments. That it is highly useful on ship-board has been sufficiently demonstrated. When it has been otherwise, I must incline to the belief that it has been carelessly or too sparingly employed. It was not used in the Hornet or Grampus, nor in the Peacock; although this latter vessel had it on board; but such was the confidence of the surgeon and other officers in the apparent absence of all cause of disease from an internal source, that it was not resorted to. It is now in general use in the West India squadron. In the late cruise of the Erie this article was dealt out unsparingly, and occasionally to the temporary annoyance of those on board; and I am convinced that to this, with the prompt and effective coöperation of the executive officer, in having every tangible part kept free from filth, may be chiefly attributed that ship's escape from the most alarming disease of the tropics. The chloride mixed with water was poured into the pump-wells, and distributed throughout the holds, chain lockers, berth deck and other parts. Its effects upon the bilge water was very evident to all. By experiments made on board ship, it was

ascertained that it required seventeen grains of chloride of lime to decompose the sulphuretted hydrogen contained in half a pint of bilge water. It must be remarked, however, that the Erie had the peculiar faculty of generating the most concentrated bilge water in the shortest possible time.*

Neither the rule laid down by Currie, to use gently stimulating drinks, nor that of Mosely, to drink nothing but water, will admit of a general application. Previous habits must here be the guide. I have not observed that those who were accustomed to the regular and moderate use of spirituous drinks were more obnoxious to attacks of fever than others of rigidly temperate habits; on the contrary, and I regret to say it, (because it affords a pretext for the intemperate,) in two or three instances I have seen the abstemious carried off in a few days, while hard drinkers, under the same exposure, have escaped. But from all I have seen I am convinced that the temperate man has, as a general rule, the best chance. Lemonade, if not too freely used, is one of the most salutary and refreshing drinks in a hot climate.

Music, though not often regarded as a preventive, is in my opinion, an important mean of placing the system, through the influence of the common sensorium, in a favourable condition to resist the action of morbific causes. Smoking tobacco must also be enumerated among the means of keeping off attacks of fever in what are called miasmatic situations. In an infected atmosphere, particularly at night, I have seen and experienced sufficient, not to doubt its utility.

The question "is yellow fever contagious?" has been so completely decided in the negative, that additional evidence would be almost superfluous; but I must mention one striking proof, out of many I have seen, which of itself, should remove all doubt on this head. When the sick were brought from the Peacock to the hospital near Pensacola, their mattresses, blankets, hammocks and bags, as they came from the infected ship were regularly taken by the attendants to be aired, and their clothes washed. The beds and bedding of those who died were immediately removed by the same persons; and not in

* The opinion that sulphuretted hydrogen is the active ingredient in the supposed miasma of yellow fever cannot be sustained; but that disease will result from respiring a long time in an atmosphere strongly impregnated with this gas must be admitted. Experiments by Dupuytren and Thenard have shown that "air containing 1-1500th part of sulphuretted hydrogen is instantly fatal to a small bird; that containing 1-800th part killed a middle-sized dog; and a horse died in an atmosphere which contained 1-150th of its volume."—*Turner's Chemistry.*

a single instance was any one connected with the hospital attacked with the disease. The whole number of attendants, including officers and those who resided at the hospital, (the washerwoman, cook, and their families, two nurses and a porter,) was twelve, besides six or eight patients with chronic complaints, and four men from the Peacock who were temporarily engaged in attending upon their sick ship-mates.

"Can the yellow fever be taken more than once?" is another question "adhuc sub judice." I have never seen a person in a second attack, unless a relapse may be so considered. Three patients at the Pensacola Hospital informed me that they had had the disease before: two of them at Key West in 1823, and the other at New York, in 1822.

Symptoms and mode of attack.—In a majority of instances the onset was without any previous indisposition, and the time generally between sunset and sunrise. A pain was felt in the head, back, or extremities; frequently in all these parts: sometimes preceded or attended, at other times followed by a chilliness. In a few a violent pain was experienced for a short time in some one particular part, afterwards becoming general. In one patient on board the Grampus, the penis was the seat of this suffering: in another the attack was announced by a neuralgic affection of the right temple. In several the knees were alone complained of at first; and in four patients in the Hornet, a spasmodic affection of the muscles of the leg was the prelude. The pulse, during this time, appeared to maintain its natural condition, or nearly so. After a short time, (from half an hour to two hours or more,) reäction commenced; the head-ache became more violent; other pains continued unabated; the skin hot, even when coldness was complained of, and generally dry, but occasionally the reverse, cool and moist. The patient would sometimes say he felt hot and cold at the same time; the bowels were constipated; the pulse full, bounding, and frequent; in one it intermitted every eighth stroke. The eyes in the sanguine and robust were red, painful, and injected; the respiration hurried; urine sometimes suppressed, and in many cases a difficulty of swallowing existed. Nausea, irritability of stomach, and pain on pressure at the epigastrium, were almost constant symptoms. In many there was a vomiting of bilious matter in small amount, and a distressing sensation of thirst and internal heat. The tongue in some was furred, in others but little altered. The cerebral functions at this period were not perceptibly impaired; but expressions indicative of great and even unnecessary alarm were occasionally uttered. When the fever made its appearance in "nervoso-bilious" tempera-

ments, and in certain subjects not of this temperament, it seemed as if the energies of the constitution, or the "vis medicatrix" if you please, were not sufficient to produce reäction. The patient would tell you "he felt very unwell, but could not say how or where." These cases were always the most difficult to manage.

When the early symptoms were subdued by the judicious application of remedial means, convalescence and recovery rapidly followed. On the other hand, when these means were neglected, or, notwithstanding their use, the morbific action predominated, a different condition of things was soon presented to our notice. The stomach refuses to retain both drinks and remedies; and when not tantalized with either, will eject its own morbid secretions, however small in quantity; the bowels are either obstinately costive, or are stimulated, perhaps by medicine previously taken, to the frequent discharge of small brown, greenish or watery stools, attended with griping; hæmorrhage takes place from the gums or nose, or both, and blood is sometimes discharged per anum; delirium is now and then met with, but more frequently the patient lies in a comatose state; the skin becomes cooler and often covered with moisture; the wrists are cold; the tongue and teeth covered with a brown or bloody crust. The matter ejected from the stomach at first resembles flakes of a brown substance suspended in a watery fluid; the proportion of brown increasing at every recurrence of the vomiting. There is, with many, an inclination to sing; they are very restless in any position, sometimes jumping out of bed to lie a moment on the floor or deck; pitiful sighing, alternated with obscene remarks, and a desire for coition was not uncommon. An itching of the genitals, and a constant rubbing or pulling at them, was observed in nearly all the fatal cases on board the Hornet, and in several of those of the Grampus and Peacock. In some there was a strong desire to eat shortly before death. As the latter stage draws near, the breath becomes very fœtid; more particularly in those who used mercury freely; confirmed black vomit takes place; hiccup; the skin of the neck and face becomes of a bronzy yellow; the patient, if asked, will say he has no pain, and express a desire to get up and walk about, which indeed he often does; he will be picking at his lips and teeth; the belly occasionally distended with flatus, (meteorism;) the eyes become fixed and partly closed, showing only the white; subsultus; irregular respiration; heaving of abdomen; convulsions, resembling in some a fit of epilepsy; and finally death. Muscular strength is often retained to the last moment; and it is not unusual to see a patient rise from his bed, make some violent exertion, lie down and quietly expire.

Treatment.—(Hornet.) In the Hornet there were fifty-five cases, of which eight died. The disease was there treated, at the instance of Dr. Birchmore, surgeon of the ship, at first on the mercurial plan, which was then considered the only legitimate one. It was afterwards varied, and with a better result; for out of the first twenty-six who were attacked, five died, and three only out of the remaining twenty-nine. After an efficient dose of calomel and jalap, calomel alone was given in the dose of grs. v.—viij. every three hours; and ung. hydrarg. rubbed in various parts of the body, the object being to excite salivation, in which condition two deaths occurred. Of the few who were bled, every one recovered. The precise number is not known; I find but three mentioned in my notes. The arsenical solution was prescribed in some cases without any good effect. In the latter stages the vol. alkali and sp. terebinth. were used without advantage. The charcoal was given once with apparent benefit. Antimonials invariably produced mischief. Tinct. opii, one hundred and forty drops in the commencement of the attack, before reäction was established, but the pain almost insupportable, was followed by prompt relief in my own person.

(Grampus.) In the Grampus the treatment was different. Having witnessed in the Hornet the inferiority of the mercurial plan, and being here in sole charge of the sick, I determined to pursue a course which to me at least seemed more in accordance with the pathological condition believed to exist. In this vessel there were thirty-six cases, and four deaths. When the attack was violent, and reäction considerable, attended with a full, active pulse, and severe head-ache, which happened in a majority of instances, I drew blood from the arm until a decided impression was evident upon the circulation. To attain this object, seldom less than twenty-four ounces, more frequently thirty-two ounces and upwards, would be required. This was sometimes followed by cups to the epigastric region, and when constipation existed, a mercurial or saline purge, aided by enemata. As a refrigerant, (in the common acceptation of the term,) the nitrate of potass was found very serviceable, with lemonade, cool barley water, flaxseed tea or gum water for drink. At the same time cold ablution was employed, which was very grateful as well as beneficial.

Case I. James Spillman, marine, æt. 30, of intemperate habits.—*September 3d.* Was ashore yesterday "on liberty" and indulged freely in drink. Says he did not feel well in the morning, but did not complain, as that would have prevented him from going ashore. Has violent head-ache; skin warm; eyes injected; pulse full and frequent; nausea; foul tongue. Took sulph. sodæ, ℥j.; and arrow root.

(These symptoms were supposed to be caused by the stimulus of drink on the day previous, and for this reason he was not bled.)

4th. Has high fever, with pain in head and back; tongue coated; bowels slightly moved. Ordered cups to stomach, cold ablution, pulv. nitr. potas. gr. x. every three hours; lemonade, arrow root.

5th. Very bad last night; at times delirious; stomach very irritable; great difficulty in swallowing; pain at epigastrium; very little fever or pain in head. Ordered blister to epigastrium. Solut. sulph. quin. every two hours.

6th. Vomiting continues. The medicine was rejected. Gave him pure lime juice, which was of no service. About 10 A. M. yesterday, he commenced ejecting a dark fluid from the stomach, the colour becoming deeper towards night; this morning it is quite black. Blister drew well. Skin and eyes assuming a yellow tinge. Speaks altogether in Dutch; does not understand a question when put in English; have to employ an interpreter. Is very restless, and has lost the power of swallowing.

8 *P. M.* Spillman lay in a state of stupor during the day, without vomiting or taking any drink. His hands and feet became cold towards evening; the ears and other dependent parts assumed a dark appearance; skin over the neck and breast yellow. At a quarter before 7, after one or two very partial convulsions, he expired.

Post mortem examination at 8¼ *P. M.*—The stomach was taken out and examined. It contained a gill or more of the matter of black vomit. The outer surface exhibited a dark spot near the cardiac, and another near the pyloric orifice, and a few large veins filled with blood. Internally the neighbourhood of the cardia and pylorus were in a state of gangrene. The mucous coat was thickened and of a dark red colour; the rugæ very large and prominent, and the vessels much injected. In some places were streaks of grayish matter, not easily removed, which by candlelight had the appearance of impure pus or lymph. The coats were easily separated from each other. The peritoneum was sound, as well as the liver and intestines, which, however, were only examined externally. The time allowed for the dissection was limited; it was performed by candlelight, and under many other disadvantages, which rendered it impracticable to prosecute it further.

Remarks.—It is evident that this case was improperly treated in its commencement; having been mistaken for nothing more than a drunken debauch, so common among men who go ashore "on liberty."

Case II. John Harrison, O. S. æt. 23, was attacked with the disease in a mild form on the 16th September, from which he was re-

ported convalescent on the 23d. On the 25th he experienced much uneasiness in the stomach and bowels from eating duff,* (or dough,) the day before, for which he was ordered salts and diet. On the 26th the ordinary symptoms of fever were developed, for which, (being considered too weak for the loss of blood,) were prescribed saline solution, enemata, cold sponging, barley water, &c.

27th. Complained greatly of his knees; otherwise as yesterday.

28th. Less fever; perspiration; frequent watery stools attended with pain; tongue clean; stomach irritable; is in great distress; constant sighing; urine suppressed; breath offensive. Ordered blister to epigastrium; effervescing draught; cold ablutions continued; thin sago.

29th. Vomited much in the night; great pain in limbs and head; skin cool; tongue still clean; pulse slow and feeble; urine comes freely; had frequent watery stools in the night; hæmorrhage from the gums; teeth covered with a dark crust. In the afternoon had frequent and painful vomitings of a black matter mixed with milk which he had been drinking; tongue dry and parched; pulse slow and weak; great pain in legs; straining, but no passage from the bowels. Ordered pil. opii, gr. ij. and sinapisms to calves of legs.

7 *P. M.* Has had some sleep; pain has left the legs; still vomits, but less frequently and with less pain; begs for another pill. Ordered opii, gr. iss., and repeat at midnight; cold tea for drink.

30th. Slept well, and only vomited once or twice in the night. Says he feels quite well, and wants to walk about—a bad sign—tongue dry in centre, edges moist; no pain any where.

7 *P. M.* Has been vomiting occasionally the same dark matter as yesterday; dozes a little now and then; respiration irregular; pulse slow; skin cool; hæmorrhage from gums continues; drinks weak coffee and milk, and sucks an orange; talks incoherently; sings "bonnie laddie;" says he is well; makes many ludicrous remarks. ℞. Opii, gr. iss.; milk and water for drink.

October 1st.—Very restless all night; talks, sings, and cries out constantly; vomited once this morning about a gill of the same black matter; pulse slow and weak; skin warmer; tongue dry; teeth covered with dark blood, which comes from the gums and corners of the mouth; skin and eyes of a dirty yellow colour.

2 *P. M.* Since morning he has taken nearly a pint of milk; pulse more frequent; vomiting ceased; gums do not bleed so much; subsultus tendinum; feet are cool, and when suspended from his cot, becomes livid.

9 *P. M.* Has been struggling in the greatest agony all the evening,

* A well known sailor's mess in imitation of plum-pudding.

and expired at fifteen minutes before nine. Being under way, the decks much lumbered, and it being desirable to dispose of his body as soon as possible, there could be no post mortem examination.

Remarks.—A relapse was here brought on by improper diet, eating duff, during convalescence from a former attack. It will be seen that hæmorrhage and black vomit took place before any opium was administered; of course not caused by that medicine, as Dr. POTTER says. In several cases it has been of the greatest benefit. Venesection here seemed to be contraïndicated by the debility consequent to the previous attack. But I now believe it might have been beneficially employed.

CASE III. William Jarvis, O. S. æt. 22. This was also a relapse, probably brought on by improper food; which, however, he denied.

Oct. 3*d.* Was attacked in the night with vomiting and purging, attended with pain in the bowels, for which he took chalk mixture with laudanum.

4*th.* Bowels relieved. Feels very weak and sick at stomach; eyes yellow, skin slightly so, and cool. Drank some thin chocolate, which agrees with him. Ordered to resume the sulph. quinin. which he had been using in his convalescence.

1 *P. M.* This morning he swallowed some pieces of orange, which occasion great pain at stomach and hiccup. Has partially vomited several times, but is not much relieved. Gave him ipecac. gr. xx. and some warm weak coffee. The emetic brought up some of the orange, and afforded temporary ease; but in three hours the severe pain returned to the stomach, and extended to the thorax, attended with great difficulty of breathing and general distress. Ordered blister to stomach; enema. Fell into a sleep, from which he awoke about midnight as from a dream, in great pain and anxiety. He had nearly recovered from this, when, a few minutes after 1 A. M. a sudden convulsion terminated his existence. He was perfectly sensible throughout the disease.

Post mortem examination. Done at sea, Oct. 5th, at 6 *A. M. five hours after death.*—The peritoneum exhibited its natural appearance, and the stomach but few marks of disease externally. It contained about half a pint of a watery fluid mixed with thickened mucus. The internal coat was thickened and inflamed, particularly near the pylorus, where it was dark-coloured and covered with grayish lymph. There was no black vomit. The blood-vessels were not injected as in Spillman's case; but there were several red spots here and there. The liver was light-coloured. The lungs and pleura showed no traces of disease.

There was no death in the Grampus after venesection.

(Peacock.)—The cases sent from the Peacock to the Hospital, Pensacola, were either of a more malignant character than those of the other vessels, or the treatment was not such as was calculated to produce an equally beneficial influence and successful result, as will be seen by the proportion of deaths. Out of thirty-eight patients admitted, nine died. Notes of these cases were taken by me at the bed-side of the patient. These were condensed or transferred verbatim into the journal, of which I have kept an exact copy; as well as of Dr. Sharp's account of each from the moment of attack to the time they were sent to the hospital. Dr. Sharp was then in charge of the medical department of the Peacock; her surgeon and assistant-surgeon being ill with the fever. The hospital surgeon, Dr. Page, was devotedly attached to the doctrines and practice of Rush and Potter, and the generality of tropical writers; consequently, the mercurial plan was here proposed. My objections, derived from a limited experience, were not to be successfully opposed to such authority; nor could I, with propriety, urge them. Yet I must, in justice to Dr. Page, (now deceased,) say that his faith in the ultra-mercurial practice began to be shaken, and towards the termination of the sickness, he admitted that a different mode of practice might be at least equally successful, and that our prejudices should rather be governed by the facts we see, than what we learn only from the authority of others. I do not mean to question the veracity or accuracy of Professor Potter, of Baltimore, when, in his lectures on yellow fever, in relating the success of his practice in three different years, he states that in the first year, out of seventy-two patients, only three died; in the second year, out of four hundred, only five died; and in the third year, out of forty-eight, not one died. Who has ever boasted of any thing like such success? May it not be asked, were they all cases of yellow fever? His plan was to give calomel in scruple doses every two hours, and to excite salivation if possible. The Peacock, when the sickness was prevailing among her crew, was anchored at Navy Cove, about four miles from Pensacola, on the opposite side of the Bay, and six miles from the hospital. The sick were sent off in boats as soon as possible after they were attacked; but they had generally been bled, or otherwise prescribed for, by Dr. Sharp, and I believe that many owe their lives to the prompt and judicious treatment they received on the spot. The quotations in the following cases are from Dr. S.'s statements.

Case IV. Midshipman R. "was attacked on the 23d inst. (August,) with violent pain in the head and back. V. s. ad ℥xiv. was ordered,

and an emetic of vin. antim. Yesterday v. s. ad ℥xvj. ℞. Calomel, ℈j. Barley water. I found him this morning with hot, dry skin; furred tongue; pulse soft and quick; less pain in back; a heavy, full pain in left temple. ℞. Ol. ricini, ℥j." Symptoms on admission into the hospital, (August 25th,) fatigue and restlessness; skin very hot; tongue furred; pulse small, tense and frequent. Was bled ℥viij.; cold water to head. Took calomel gr. xxx. in three powders, the last of which produced slight vomiting.

26*th.* This morning skin cooler; less head-ache; pulse frequent, but soft. Has had two light brown stools. ℞. Ol. ricini, ℥j. Ordered frictions with ung. hydrarg. to arms and thighs; barley water.

1 *P. M.* Skin hot. Sponge with water and vinegar. Fainted in the easy chair. Repeat mercurial frictions.

9 *P. M.* Has had slight delirium; skin hot; stomach irritable; acid eructations. ℞. Magnes. calc. ℈j. Bene water* for drink. Cold to head, &c. continued.

27*th.* Very restless in the night, with occasional delirium; had a few small stools of a yellow, watery substance mixed with magnesia. Skin quite cool this morning, and inclined to moisture; that of forehead yellow; stomach irritable and painful on pressure. Applied sinapisms to epigastrium and to the legs. Ung. hydrarg. to groins and arm-pits.

1 *P. M.* Irritability of stomach continues; eyes yellow. Ordered effervescent draught.

4 *P. M.* Has hiccup; mind wandering; inclination to sing. Cont. mist. efferves. p. r. n.

8 *P. M.* Delirium increasing; frequent hiccup; pulse slower and weak. Applied blisters to epigastrium and lower extremities. Wine sangaree for drink, is unable to swallow it.

28*th.* Continued in a comatose state all night, with occasional sighs and hiccup. Lower extremities becoming cool. Blisters have not irritated the skin. Face and neck yellow; small quantities of a brownish fluid discharged from the stomach; breath offensive; eyelids nearly closed, showing only the sclerotica.

1 *P. M.* Is insensible to surrounding objects; confirmed black vomit; is unable to swallow any thing; heaving of abdomen.

3 *P. M.* Respiration short and convulsive; pulse sinking; extre-

* A single leaf of the bene plant, (Sesamum orientale,) in a tumblerful of water, forms one of the most grateful and refreshing drinks that can be given to a fever patient; and from its being colourless and almost tasteless, is seldom refused.

mities cold. Died at half past 5 P. M. There was no examination after death.

Case V. Frederick Lambert, "was attacked yesterday afternoon, (August 28th,) with a chill, pain in the head, and other attendant symptoms of 'fever.' I bled him to the amount of ℔iij., and gave him calomel, ℈j. which has operated once." On admission into the hospital very little was required to be done. He took calomel on the 29th and 30th, 'by way of security;' but his convalescence may be dated from the first day of the treatment.

Case VI. J. D. R. master's mate, was taken ill last evening, (28th,) and brought to the hospital this morning. No account of his case. Says he took some medicine last night, (supposed to be calomel.) Bowels have been twice opened. Present symptoms. Slight head-ache; skin warm, but moist; tongue furred; pulse small and frequent; no pain at epigastrium. Ordered calomel, ℈j. At 11 A. M. ol. ricin. ℥j. At 12, calomel, ℈j. Barley water.

12 *M.* Has head-ache; skin hot; pulse frequent, tense and quilled; eyes injected. Was bled ℥x. Cold water to head.

2 *P. M.* Calomel, ℈j. Cold water continued.

5 *P. M.* Has had three bilious stools; some fever; inclined to sleep. Repeat calomel, ℈j. at 12, (nocte.) Drinks and cold applications as heretof

30*th.* Head-ache; skin warm; tongue furred; pain at stomach. Took calomel, ℈j. at 8 A. M. At 11 the febrile symptoms increasing, was bled ℥vj. which gave relief.

2 *P. M.* Has had several very copious dark green stools; has been asleep, vomited a small quantity of blood. Ordered ung. hydrarg. rubbed on abdomen. Arrow root.

6 *P. M.* Delirium; says some one in the room is going to kill him. Ordered sinapisms to lower extremities. Enema. Calomel, ℈j. at midnight.

31*st.* No fever this morning; less pain in head and stomach; mouth becoming sore; is less alarmed at his situation; stools green. Ordered calomel, ℈j. at 10 A. M. Tea, barley water.

1 *P. M.* Has an exacerbation; tendency to coma; head-ache; skin warm; pain at epigastrium. Ordered sinapisms to ankles.

3 *P. M.* Feels better; fever subsided ℞. Calomel, ℈j. Barley water.

11 *P. M.* Vomits a dark-brown, flaky liquid. ℞. Calomel, ℈j. at 1 A. M.

September 1*st.*—Black vomit; wrists cold; pulse scarcely percepti-

ble. Ordered aq. calcis, ℥ss. At 10 A. M. R. Pulv. carbon, ʒss. every two hours. Bottles of hot water to lower extremities.

2 *P. M.* No return of vomiting since 10 o'clock. Continued charcoal and hot water to extremities.

3 *P. M.* Rejected the last dose of charcoal.

6 *P. M.* No vomiting since 3 o'clock; pulse more developed.

2*d.* Very noisy and restless all night; cannot swallow; rises frequently from bed; stupor; pulse thready, and can hardly be felt; feet and hands cold.

Died at 2 P. M.

Case VII. Simeon Philips, seaman, æt. 26, "was attacked this morning, (August 29th,) with pain in the head and back, and other symptoms of the 'fever.' I bled him ℔ij. and gave him calomel, ϑj." Admitted into the hospital at 9 A. M. Pulse slow, (48,) and soft, skin cool and moist. Took to-day calomel, ϑj. and the same followed by ol. ricin. ℥j. on the 30th. Was doing well until the afternoon of the 31st, when the stomach became irritable, attended with pain in back and abdomen, and restlessness. A blister was ordered to the epigastrium, and calomel, ϑj. The next day salivation took place, and he slowly convalesced.

Case VIII. Thomas Bowden, second seaman, Sept. 13th, "was attacked yesterday afternoon with excruciating pain in back and head, skin hot and dry; pulse strong, quick and very voluminous. Bled him ad ℔iv. before the pulse was reduced. Ordered calomel, ϑj. Enemata of warm salt water every four hours. Rice water for drink." Was reported convalescent on the 15th.

Case IX. Lieutenant H. This was one of those insidious cases referred to, as occurring in peculiar temperaments. It did not at first seem to be one which would require or bear bleeding. About the fifth and sixth day of the disease he appeared to be approaching to convalescence. At this time he had taken calomel to the amount of ʒiij. in doses of ϑj. each. On the seventh day an unfavourable change took place. He became delirious; his tongue and jaws were sore; was very restless. On the eighth day these symptoms increased. The parotid glands were swollen and painful; the tongue and mouth sore, but there was no salivation: the mercury here, probably displaying its toxicological rather than its remedial agency. The eyes and skin became yellow, and the breath offensive.—Tenth day. The swelling of the parotids somewhat subsided and without pain.—Eleventh day. Occasionally spit a small quantity of blood.—Thirteenth day. A small black spot appeared on the tumour of the right side. Died in the afternoon.

After death a large quantity of frothy, offensive matter, resembling the foam of ripe porter, issued from the right nostril. No dissection.

Case X. M. Hartnett, carpenter, "complained on the 7th, (September,) of the following symptoms—dizziness; sickness of stomach; languor; loss of appetite; tongue and mouth dry; pulse soft; bowels constipated. Ordered calomel, gr. xv. At 5 P. M. ol. ricin. ℥j.; drink rice water. Yesterday, (8th,) felt weak; tongue and mouth still dry; pulse as before; an uneasy sensation about the stomach; slight head-ache. Ordered enema of rice water every three hours. At bed-time a blister to epigastrium, and but little drink, as there was some irritability of stomach." Received at the hospital on the 9th, about noon.

Symptoms on admission—says he has no pain; skin dry; tongue dry and coated; great expression of anxiety; bowels open; pulse frequent and weak; stomach irritable; strains very much while vomiting blood, and a dark matter mixed with the fluids of the stomach; perfectly rational, and alarmed at his situation. ℞. Aq. calcis, ℥ss.; p. r. n. Constant moaning.

2 *P. M.* Nothing retained by the stomach; black vomiting continues. ℞. Acet. plumbi, ʒss.; aquæ, ℥j.; M. s. ʒij. every half hour.

7 *P. M.* Swallows with great difficulty; throat very sore; stomach less irritable; retains barley water.

10*th.* Incessant pitiful sighing; teeth gummy; black crust on gums, lips and tongue; pulse frequent and weak.

10½ *A. M.* Extremities cold; no pulse; eyes fixed; convulsive breathing; cheeks yellow.

Died at fifteen minutes before 11 A. M.

No calomel was given to this patient while in the hospital. Black vomit took place on the morning of his admission, and was temporarily checked by the acet. plumb.

Post mortem examination, three hours after death.—The stomach was distended with flatus; vessels of omentum and mesentery engorged; a few enlarged vessels on the external surface of the stomach. Liver lighter coloured than natural. Stomach contained about four ounces of black vomit mixed with particles of pus or mucus. The internal coat was smooth; no appearance of rugæ or villi; patches of grayish lymph or mucus adhering to it; pylorus thickened. There was not time allowed for a more minute examination.

Case XI. M. S. Aydon, marine, æt. 23, September 7th, admitted at 6½ P. M.—"Was attacked last evening with pain in the head and

back; skin hot and dry; pulse quick and soft. Was bled to faintness. Took this morning calomel, ℈j.; v. s. repeated ad ℔iss. and an enema administered." Present symptoms—head-ache; fever; tongue furred; no pain at epigastrium. ℞. Calomel, ℈j. Barley water.*

8*th.* Bowels opened several times; last discharges yellow. At 10 A. M. ℞. Calomel, ℈j.; drink as before. At 2 P. M. ℞. Calomel, ℈j. which produced nausea, followed by vomiting of a black, flaky liquid; eyes and countenance bronzy. Ordered aq. calcis, p. r. n. Skin hot; strength good.

7 *P. M.* Has been bleeding at the nose; pain at epigastrium; has had a copious black stool.

8 *P. M.* Vomits the same black liquid. Continued aq. calcis.

9*th, at* 1 *A. M.*—Black vomit; limbs drawn up; eyes wild; skin hot; pulse quick; constant groaning. Ordered sinapisms to feet; cold ablution. ℞. Acid. muriatic, ℥ss. in aqua, ℔ij.; drink with an equal quantity of barley water.

2 *A. M.* Flighty; skin cool; pulse moderated.

8 *A. M.* Skin cooler; pulse frequent and weak; pain at epigastrium; still vomits.

10 *A. M.* Blister to stomach. Skin yellow.

2 *P. M.* Says his teeth are loose; breath mercurial; stomach still irritable. Ordered aq. calcis, p. r. n.

7 *P. M.* Has been bleeding freely from the nose; less vomiting; blister well drawn; dress it.

10*th, at* 8 *A. M.*—Eyes fixed; heaving of abdomen; lips contracted and frothy; pulse very feeble; hands and feet cold.

Died at 9 A. M. After death frothing at the mouth. The muslin bandage on the head was soaked with a putrid, bloody foam.

Case XII. John Fullerton, "was attacked this morning, (September 10th,) with violent pain in the head, back and limbs; chilliness; pulse slow and labouring; skin hot and dry; nausea, &c. Ordered v. s. ad ℔iiss. which relieved the pulse and caused vomiting." Was brought to the hospital at 1 P. M. Says he was in the market boat, and taken ill about 6 A. M. Complains of pain in head; back and limbs; is very restless; easy in no position; pulse slow and feeble; skin cool; tongue furred. ℞. Calomel, ℈j.; barley water. At 4 P. M. calomel, ℈j.

8 *P. M.* Has been vomiting his drink; pulse quick; skin warm; restless. ℞. Calomel, ℈j.; drinks continued. Repeat calomel at midnight.

* From Aydon's own account, it seems that he was unwell several days before he reported. Says he has eaten nothing since Thursday last, four days.

11*th*. Has pain in head and back; no fever; pulse 80; gums white; very restless; vomited some green bile this morning; has black stools.

9 *A. M.* R. Calomel, ℈j. and barley water.

1 *P. M.* R. Calomel, ℈j.

4 *P. M.* Very little pain; not so restless; stools yellow. R. Calomel, ℈j. to be repeated at 8 P. M. and 12, (nocte.)

12*th*. Head-ache continues; eyes dull and heavy; uneasy in bed; skin cool; pulse 80. R. Calomel, ℈j. and ung. hydr. to be rubbed in the groins. Calomel, ℈j. at 12. At 12½ vomited a yellowish liquid, containing brown flakes. R. Calomel, ℈j. at 4, and ung. hydr. to groins.

6 *P. M.* Comatose; rejects his drinks. Ordered calomel, ℈j. at 8 and repeat at 12, (nocte.)

13*th*. Still comatose; skin cool and clammy; stomach still irritable; had a bilious stool. R. Calomel, ℈j. at 10, and ung. hydr. continued.

2½ *P. M.* Vomiting continues. R Calomel, ℈j.

7 *P. M.* Very uneasy; eyelids half closed; still vomits. Ordered blister to epigastrium.

14*th*, 8 *A. M.* Passed a restless night. Blister drew well; eyes and skin of cheeks becoming yellow; stomach very irritable; pulse small, slow and weak; skin cool and clammy. R. Mist. efferves. every half hour. Hot bricks to feet.

12 *M.* Stomach retains nothing; hands and feet cold; pulse very weak.

At 2 *P. M.* R. Sp. terebinth, ʒij.; sac. alb. et farinæ q. s. mucil. gum Arab. ʒj. M.—a tea-spoonful every half hour.

8 *P. M.* Has not vomited for some time; pulse slow and weak; restless. R. Calomel, ℈j. at 12, (nocte,) and at 4 A. M.

15*th*, *at* 8 *A. M.* Spits and vomits in small quantities a black flaky matter, mixed with the fluids of the stomach; extremities cold; skin and eyes of a dirty yellow; refuses medicine, &c.; sweat profusely in the night; no pain, but is restless.

1 *P. M.* Heaving of abdomen; black vomit; hiccup; delirium. Died at 6 P. M.

The total amount of calomel taken by this patient was ʒvj. and yet neither the mouth nor salivary glands were affected.

Post mortem examination.—The brain only was examined, and that but partially. The vessels of the pia mater were injected. The sinuses were empty. About ʒij. of bloody serum in the ventricles. Vessels of the plexus choroides congested. The dissection was not prosecuted further, for reasons which need not here be mentioned.

Case XIII. Dr. S. admitted at 6 P. M. September 15th. Was attacked about 8 o'clock this morning with a chill; shortly afterwards, pain in back and abdomen, followed by fever. By his own direction he was bled ℔iss. had thirteen leeches applied to the stomach, took a warm bath, calomel, ℈j. and an enema. On admission had very distressing pain in the loins and about the umbilicus; could not rest a moment in one position; skin warm; pulse full and frequent; tongue furred.

At 6½ *P. M.* Ordered an enema, which brought away a considerable quantity of dark fæcal matter, and relieved the pain in the abdomen. Took ol. ricin. ℥j. which was rejected.

9 *P. M.* Still has very great pain in back; skin cool and moist; pulse frequent. Took a Seidlitz powder; and the back was rubbed with a stimulating liniment.

At 10 *P. M.* The pain continuing very intense, gave him tinct. opii, ℥j. which in half an hour was followed by relief, and he fell asleep.

16*th.* Has had a comfortable night. Is free from fever and pain. Was convalescent on the 20th.

Many more cases might be cited to illustrate the comparative value of the different modes of treatment; but they have already exceeded the limits originally intended. I will conclude the account of the cases from the Peacock, by a tabular view of the time required for a cure in the mercurial and non-mercurial plans.

Of seven patients who were treated in the first method,

One took of calomel	5	scruples,	and was fit for duty in	20 days.
Do.	7	"	"	22
Do.	10	"	"	28
Do.	11	"	"	22
Do.	12	"	"	22
Do.	13	"	"	22
Do.	15	"	"	39

All of these were salivated.

Of seven who were treated on the non-mercurial plan,

Two were well	and	fit for duty in	11 days.
One	"	"	12
One	"	"	17
Two	"	"	19
One	"	"	20

Of the nine fatal cases, eight were treated with mercury; of whom five where salivated, or had the mouth affected.

The remaining cases underwent a mixed plan of treatment. In some of them calomel was used, but not with the view of salivating. These recovered in from sixteen to twenty-six days.

Of the four deaths in the Grampus, three took place on the seventh, and one on the fifth day. Of the eight deaths in the Hornet, one took place on the third day, two on the fifth, four on the seventh, and one on the eighth day.

Of the nine deaths among the Peacock's patients, three took place on the fifth day, three on the sixth, one on the seventh, one on the thirteenth, and one on the twenty-eighth. This last one died from a mortification and extensive sloughing of the cheek and upper jaw, consequent to salivation.

Recapitulation.—Of the whole number of deaths above-mentioned, (viz. twenty-one,) one took place on the third day, six on the fifth, three on the sixth, eight on the seventh, one on the eighth, one on the thirteenth, and one on the twenty-eighth.

From the account here given, and its accuracy may be relied on, it must be evident to every unprejudiced mind, that the mercurial treatment of yellow fever is not what it has been so long considered by a majority of writers on this disease, the only rational and successful mode of management. In many cases the prevailing symptoms have been certainly aggravated, and new ones brought into existence. But I have also seen the disease "broken," as it were, on the appearance of a sore mouth, or a flow of saliva; and "post hoc, ergo propter hoc" is always triumphantly applied to such fortunate coïncidences.

Philadelphia, March 30th, 1833.

ART. III. *Cases and Observations regarding Puerperal Fever, as it prevailed in the Pennsylvania Hospital in February and March,* 1833. By HUGH L. HODGE, M. D. one of the Physicians of that Charity.

FEW circumstances more frequently baffle the scrutiny of the scientific physician than the causes of epidemic diseases. They seem involved in a mystery, to us impenetrable, but which future generations, assisted by the lights of new, or improved sciences, may possibly elucidate.

The fact, that puerperal peritonitis should ever prevail in the Penn-

sylvania Hospital, will appear inexplicable to those acquainted with the fine wards allotted to the lying-in women, and with the great neatness, comfort, and excellency of their accommodations in an institution, noted in our country for the superiority of its provisions for the sick poor. For the information of those not thus informed, it may be observed that the buildings "exhibit a south front, extending, east and west, two hundred and eighty-one feet. They consist of a centre building, united, by long wards of three stories in height, to two wings extending north and south." The centre building measures sixty-four feet in front by sixty-one in depth, and, with the balustrade surrounding its cupola, seventy-two feet in height. The second story is occupied by the lying-in wards, and two chambers for medical assistants with spacious staircases and passages. These wards extend the whole front of the centre building, and consist of two large rooms on the east and west, measuring twenty-four feet by twenty-three feet and fifteen feet in height, separated by a smaller room for the nurse, sixteen feet by eighteen feet. Ventilation is easily and fully effected, not only from their exposed situation, and the arrangement of the windows, but also from openings into the chimnies near the ceiling. The hospital occupies the interior of a square, "surrounded by majestic forest trees," and containing four and a quarter acres of ground. On the east, a square of similar dimensions, and on the south and west, large lots, containing in all about ten acres, are preserved unoccupied, so that a free circulation of air is secured; while every attention has been paid that fresh air be daily and frequently admitted to the lying-in wards, with suitable precautions.

Notwithstanding, however, these favourable circumstances, no spot in this city has been so frequently visited with peritonitis puerperalis as the Pennsylvania Hospital; and as already intimated, the efficient cause has escaped the attention of the able physicians and managers of this charity. It can merely be observed, that the atmosphere of the house induces a predisposition to peritoneal inflammation after parturition, at particular but uncertain periods, and that this state of the atmosphere also predisposes other patients, especially surgical ones, to erysipelas, as the two diseases have usually been found coexistent in the hospital. This idea that erysipelas and puerperal peritonitis are dependent when endemic in this institution upon similar causes, is confirmed by some attending circumstances, to which we may advert hereafter.

The following table, prepared by Mr. Malin, the librarian, exhibits the number of patients admitted into the lying-in department from its establishment in 1803, to the 31st of March, 1833, of those

that have been removed before delivery, and of those who were confined, with the event whether death or recovery:—

TABLE I.

A Statement of Cases admitted into the Lying-in Department from its Establishment in 1803, *to April* 28*th*, 1833.

Official Year ending April 28th.	Women Admitted.	Removed.	Delivered.	Recoveries.	Deaths.	Official Year ending April 28th.	Women Admitted.	Removed.	Delivered.	Recoveries.	Deaths.
1803	2	1	1	1		Brought over	124	6	117	106	7
1804	3		1	1		1819	26	1	24	24	
1805	5		7	7		1820	50	3	46	46	
1806	3		2	2		1821	48	3	46	42	4
1807	5		6	5	1	1822	33		33	32	1
1808	5		4	4		1823	48	4	43	38	5
1809	5		5	5		1824	43	6	35	33	2
1810	6		6	5	1	1825	41	3	43	43	
1811	5	1	5	5		1826	30	4	27	27	
1812	8		7	7		1827	38		36	35	1
1813	4		4	4		1828	48	5	42	42	
1814	7		6	6		1829	68	5	62	60	2
1815	17		17	17		1830	68	5	63	60	3
1816	14	2	13	10	3	1831	46	5	44	36	8
1817	17	1	12	10	2	1832	36	4	28	26	2*
1818	18	1	17	17		1833	48	8	43	43	5
Carried over	124	6	117	106	7	Total - -	795	62	733	693	40

The whole number of deaths after 733 labours amounts to 40; nearly 5.6 per cent. but the immediate causes of death in individual cases have not been recorded. Some are said to have died of hæmorrhage, or of phthisis pulmonalis, and one of mania, but most of the deaths have resulted from puerperal peritonitis. From these documents, and from the accounts given by physicians connected with the institution, it appears that the disease has prevailed at four distinct periods, viz. in 1816–17; in 1821–22–23–24; in 1829–30–31, and again in February and March, 1833, but the number of cases has not been preserved; unfortunately, if reports can be depended on, they have

* The two deaths mentioned as having occurred in the official year 1832, were at the commencement of this year, namely, in May, 1831; for the wards were closed June 1st, 1831, and no death occurred from the reöpening of the wards in September, 1831, to the 17th February, 1833—a period of more than seventeen months.

but little exceeded the number of deaths.* It should also be observed, that although the disease prevailed during the years mentioned, yet the cases were frequently distinct—days and weeks elapsing between the illness and death of one individual before another was affected—while many deliveries occurred without any peculiar or threatening circumstances. The females removed to other and distant wards were apparently as liable to the complaint as those who remained in their original situation. This was remarked during the last endemic, as well as on preceding ones. These facts bear upon the subject of contagion and infection.

In consequence of the number and fatality of the cases occurring in the fall of 1830, and the subsequent winter and spring, the managers, by the advice of the physicians, determined to close the wards for a time, which was done in June, 1831. They were reopened in September following.

Having been elected in November, 1832, a physician to this department, as successor to the venerable Professor James, who for twenty-five years had ably served the institution, but whose increasing infirmities rendered it necessary to pay those attentions to his own comfort, which had been sedulously bestowed on the welfare of others, I received from my colleague, Dr. Charles Lukens, the charge of the wards on the 1st of January, 1833, then containing six patients, of whom two were already confined, and four in expectation. All were very well; no complaints were heard beyond the usual pains of labour, and the little pain and irritation preceding or accompanying the flow of milk. The wards were daily ventilated, and every attention was paid as usual to the comfort and health of the inmates.

Under these circumstances, Margaret Reilly, a young woman of good constitution, who had been seven weeks in the ward, and apparently very well, was delivered after an easy labour of her first child, on Tuesday, the 12th of February. On Wednesday, the 13th inst. as she had some febrile excitement, and a yellow, foul tongue, a dose of magnesia was prescribed—the patient complaining of no pain, and no suspicion of puerperal fever being entertained. I did not see her again before Saturday, the 16th inst.† and was surprised to find her system prostrated under a severe and acute peritonitis. On inquiry I found that the magnesia had operated freely, but with considerable

* Vide Table II.

† The regular days for visiting the hospital are Wednesdays and Saturdays. All the ordinary duties of the house are left in charge of the house physicians—graduates in medicine.

pain on Wednesday night and Thursday morning, but apparently with complete relief to the febrile and other symptoms. On Friday noon she had severe pain in the abdomen with diarrhœa and fever, the house physician, Dr. Mifflin Wistar, (to whose able and indefatigable attentions by day and night during this trying epidemic, as well as for the report of cases appended to this paper, I feel greatly indebted,) bled her ad deliquium, and soon after had sixty leeches applied to the abdomen, so that the symptoms disappeared. During the night, however, they returned, the inflammation not having been completely subdued, and I found her on Saturday with excessive tympanitis, great pain in the abdomen, propagated by pressure on the epigastric region to the knees and also to the wrists, where pain was severe. The surface was cold and pallid, features contracted, eye sunk, pulse excessively frequent, and very weak. Stomach irritable, and her mental powers were beginning to fail. No expectation was entertained that recovery was possible—from the extent of the inflammation and the prostration of the system. The treatment* proved but palliative, and the patient died the succeeding day—the sixth after delivery, and the third after the symptoms of inflammation were first decidedly manifested.

On post mortem examination the uterus was found perfectly healthy; the sanguineo-purulent matter on its inner surface could easily be removed, and no other evidence of disease was there manifested. The ovaries were inflamed; the right merely on the surface, but the left was much enlarged, exceedingly soft, and of a dark colour. The whole peritoneum bore marks of intense inflammation, with free depositions of serum, pus and lymph. On the posterior surface of the uterus lymphatic depositions were made under the peritoneum in the cellular membrane, but exterior to the uterine tissue.

On the death of this individual the ward was vacated, the bed destroyed, the room cleansed, whitewashed, purified by solutions of chloride of lime and soda, the fires removed, and the windows kept open for several days and nights in succession. The females to be confined were divided—part remained in the east room, while four were removed to a large room in the northern extremity of the western wing of the hospital. In this room the next delivery occurred.

Case II. Ellen Lehy. This patient was of a sanguine temperament, florid complexion, and good muscular developments. Three weeks before her confinement she complained of irregular but severe pains, apparently announcing labour, generally in the back, often in

* See Case I. appended to this report.

the sides and lower limbs; her pulse was full and strong, bowels costive. She was several times bled and purged, and daily for a week or more used a warm bath. These measures, in conjunction with a farinaceous diet, had the desired effect, so that for a week before her confinement she had no pain or other symptom of irritation. Her general health, strength and spirits appeared to be very good.

Delivery ensued without difficulty early on Tuesday, the 26th of February, nine days after the death of Riley, and in a different ward. The next day felt and appeared very well; pulse being rather frequent and tongue whitish. On Thursday morning, the 28th inst. about 4 A. M. had a slight chill, and some little pain, like after-pains—fever and restlessness followed; V. S. ad deliquium relieved every symptom of general and local irritation at the time. When I saw her about 9 o'clock, A. M. said she felt perfectly well, had not the least tenderness on pressure, or even by grasping the uterus; no tympanitis; skin moist, but her pulse was very soft, frequent and weak; complexion mottled, particularly in the face, and respiration hurried like a person agitated, or exhausted by fatigue; tongue whitish, and lochiæ somewhat offensive; no disposition to secrete milk. There being no evidence of local inflammation, and the pulse being weak and frequent, the neutral mixture, with morphia, rest, absolute diet, and fomentations to the mammæ were prescribed; also injections of warm barley water into vagina. At every visit, my patient would say she was not sick but merely weak; but the peculiarity of the complexion, hurried respiration, frequent pulse, and absence of milk, too surely indicated internal disease, notwithstanding the freedom from pain and tenderness, and the natural condition of the abdomen. Bleeding, and even leeches, were forbidden by the entire absence of pain, of heat and dryness of surface, and by the softness and weakness, ("gaseous condition,") of the pulse. The mercurial practice was therefore adopted; the bowels being kept open by enemata, and once by the exhibition of senna infusion—but this last proved irritating and injurious. No decided benefit resulted from any measure adopted; the frequency and weakness of the pulse increased, as also the sense of exhaustion; bilious vomiting ensued; prostration followed, and death occurred on Monday, March 4th, the seventh after delivery, and the fifth after the occurrence of the chill. During the whole period of her illness, with the exception of the slight colicky pains on the 28th, she experienced no pain, and had no tympanitis. Even on Sunday, the 3d inst. my colleague, Dr. Lukens, who had seen much of this complaint during the endemic of 1830–1, regarded the size and feel of the abdomen as perfectly natural—the uterus could be embraced

by the hand, and moved from side to side without producing uneasy sensations. Nevertheless, post mortem, every evidence of inflammation coëxtensive with the peritoneal surface, was exhibited even to the formation of new membranes. The uterus was perfectly healthy, as also its veins, many of which were laid open.

Could this female have had peritonitis before her confinement, relieved by the antiphlogistic remedies adopted, but again fatally aggravated by the parturient state?

During the progress of this case, another patient was delivered, March 1st, in the same room, who afterwards suffered from severe bilious symptoms, some fever, and much subsequent debility, but recovered without any characteristic symptoms of peritonitis.

On the death of E. Lehy, the former ward, in the centre building, was again occupied, as change of place was ineffectual, and suitable measures for purification had been employed for twelve days.

Case III. M. Viney, an intemperate female, who, however, had been exceedingly benefited by a temporary residence in the building prior to her confinement, was delivered March 1st of her first child. She manifested on the second day many of the peculiar symptoms of peritonitis, particularly pain, frequent pulse, and foul tongue. Pulse however had no tension. She readily recovered under the influence of calomel, leeches, low diet, and moderate revulsives. Vide Case III. Another patient was confined in this room who did well.

Case IV. C. Borstall, a healthy woman, was delivered in the same ward, of her first child, on Wednesday, March 6th. She continued remarkably well, free from pain and fever, with a good appetite, excellent spirits, and an abundant flow of milk during the remainder of the week. Before daylight, however, on Sunday, March 10th, she suffered from symptoms indicative of intestinal irritation,* pulse not being over 100, milk and lochiæ continuing. Was relieved by 100 leeches to the abdomen, anodyne enemata, &c. As precautionary measures, Dover's powders with calomel were exhibited every two hours. In the evening, although free from pain and tenderness, and having no purging, her tongue was found dry in the centre; pulse and other indications favourable; oil was given. Towards midnight, having some fever, was freely bled, even to faintness; oil operated; felt better; her pulse still rather frequent, and tongue sometimes dry in the centre.

Monday the 11th, seemed much better; but on the 12th and 13th, although there was no pain on pressure, and no swelling, yet had oc-

* Vide Case IV. in Hospital Reports.

casional griping and sometimes a little mucous purging; pulse being rather more frequent. Fever appearing, was again bled. Next day, Thursday the 14th, pulse 120; tongue furred, dry line in its centre, and milk and lochiæ diminished. Although there was an entire absence of pain even on pressure, and of swelling, yet I had little doubt, that we had again peritonitis to contend with—perhaps complicated with colitis, but the pulse had become worse under evacuations, more frequent and weak; skin moist, clammy, and disposed even to be cold; mercurials were prescribed, but as the respiration was becoming short, and the exhaustion great, had to give wine-whey in the evening.

Friday, the 14th.—Symptoms were very bad; great prostration; hurried respiration, &c. but still no pain in abdomen; neither did she experience any during the whole course of her disease, but would frequently say, when pressure was made, "If there be no pain, you will produce it by your punching." System reäcting under stimuli, the mercurial plan was now more vigorously pursued.

On the 17th the intestinal excretions indicated the influence of mercury, and the gums and tongue were slightly inflamed with some ptyalism but no mercurial fœtor. As no very decided influence had been exerted by the mercury, it was continued a day longer; the patient became weaker, mind wandering, and pulse more frequent and weak, still no mercurial fœtor; gums, tongue, &c. became ulcerated as in aphthous affections, with little swelling or ptyalism, and no tumefaction of the cheeks or glands. She now complained, Monday the 18th, of soreness and great pain in forearms, the muscles of which were swollen and even rigid. Mouth became more ulcerated; the prostration increased, so that death ensued on the 20th inst. fourteen days after delivery, and the tenth of her illness—the most protracted case which occurred.

Although this female had never suffered from abdominal tenderness, her pain being always spasmodic, not aggravated or excited by pressure, and although there had been no tympanitis, and but slight fever, and the symptoms indicated irritation of the mucous membrane, rather than of the peritoneum, nevertheless, *post mortem*, all the abdominal viscera were found in a healthy condition; natural fæces existed in the large intestines, and the biliary and other fluids appeared healthy, while the peritoneum bore marks of extensive inflammation, even to the formation of new membranes and of large quantities of purulent matter in the cavity of the abdomen. The uterus and its veins were free from marks of disease.

Case V. During the progress of the preceding case, a rapid and

melancholy instance occurred in the same ward. Harriet Pitney, æt. 33 years, an English woman, of good but not robust constitution, was confined with her second child early Monday, March 11th. That day, no indications of disease, nor on Tuesday, her milk appearing, apparently in sufficient quantity for her infant. On Wednesday was informed she was doing well, but on examination found her skin more pallid than usual; lips bluish, and face mottled; tongue yellowish at root; pulse 120, soft, rather full, and compressible; respiration frequent; surface of body natural as to temperature and moisture; some milk in her bosoms, and lochiæ of a good colour and quantity; there was no tympanitis, and patient said she was doing well, not complaining of any pain; but pressure over hypogastric and iliac regions excited pain. One hundred leeches were applied to the abdomen, the pulse, &c. forbidding V. S.; and ol. ricini was administered, as her bowels had not been moved since delivery. This was at noon. The leeches were followed by a slight chill, faintness, nausea and vomiting, but the soreness on pressure was relieved. Dover's powder and calomel were given; diet absolute.

Thursday, the 14th, had a comfortable night, but symptoms worse; pulse weaker and more rapid; respiration more hurried; the blueness of lips more decided; milk and lochiæ nearly gone, and the pain on pressure returned; turning in bed now excited pain; still little swelling of abdomen. Calomel was freely given, and one hundred leeches again ordered with revulsives to the extremities, &c. These again afforded partial relief to the local affection, but general symptoms were aggravated. Bowels opened by an injection—stools natural. Powers of system continued gradually to sink, and the local irritation, as indicated by pain on pressure, and the occurrence of slight tympanitis, with restlessness, &c. rapidly increased in extent and severity. On the succeeding day, stimuli could no longer be withheld, and seemed for a time to be useful, but prostration and death followed early on the 16th, the sixth day after delivery, and the fourth after the first indications of disease were detected. Post mortem, all the consequences of decided peritonitis were detected. See details, Case V.

Another female was delivered the same night with Mrs. P. and for three days was in the next bed to her. She suffered from some bilious symptoms, but had no inflammatory affection, and did well.

Case VI. The next patient was Mary A. Munhollan, a young and delicate female, who was admitted into the house on the 5th of March, suffering from bronchitis and colitis. For some weeks previously, she had dysenteric stools, occasionally with blood, and for a

few days a troublesome cough from exposure and neglect. There was no fever on admission, and the symptoms not very severe. The irritation of the bowels was apparently relieved by demulcents, anodynes, chalk, &c. and her cough was better under the same course of treatment. Labour ensued Wednesday, March 13th, when she was not more than seven months advanced. It was a case of compound pregnancy—twins being born, but so feeble that they survived but a few hours. The mother complained of weakness; skin very pallid; but with the exception of after-pains, which were severe, she appeared well on the 13th and 14th. Towards evening of this last day, Thursday, her skin became hot and dry, and tongue furred, but no pain on pressure, and lochiæ continued. Mammæ, however, did not swell. Calomel and oil given as a cathartic.

Early in the morning some tenderness detected in the uterine region; pulse had become 120, but soft, rather full and weak; no milk; lochiæ diminished; respiration rather short; bowels not opened. Gave Epsom salt, and twenty foreign leeches, (equal to one hundred American,) were applied over the iliac regions. No relief, but restlessness increased. Warm fomentations, spirit of turpentine to hypogastric region; calomel in small and repeated doses, (gr. ij. q. s. h.) Bowels were opened at noon, with much temporary relief as regarded the sensations of patient and the restlessness; her cough now returned, and demanded anodynes, while her pulse became weaker and more frequent.

Saturday, the 16th.—Pulse now quite feeble, and more frequent; skin pallid; lips bluish; no febrile heat; soreness and pain on pressure rather greater, and was felt in the iliac regions—not in the upper portions of abdomen; mammæ flaccid; lochiæ nearly gone; lies most comfortably on her sides. In this condition, ventured on account of the local irritation to reäpply the leeches, fifteen in number, to the abdomen, but with no apparent advantage. For reasons hereafter to be detailed, it was now determined to apply ice to the abdomen, and warmth to the extremities; and internally, to continue the calomel. In the evening, she expressed gratification as to the influence of cold; it rendered her far more comfortable than "*the hot things*," but complains of the purging as distressing in every way. Combined morphia with the calomel.

Sunday, the 17th.—Still some purging, but symptoms not aggravated, indeed better; pulse now 128; less tenderness and soreness; ice grateful, although the skin of the abdomen feels as cold as the ice on its surface. Continued the mercurials and anodynes, and directed nutritious but simple diet, with wine to support her vital powers.

In the evening, purging continuing, mercurial frictions were substituted for the calomel. During the night bilious vomiting came on, which, with the purging, aggravated the exhaustion, so that on the 18th inst. (Monday,) symptoms of sinking became very decided; the cold was removed, stimuli were given, but generally rejected, and death ensued by 4 P. M., the sixth day after delivery, and the fourth day after the occurrence of febrile symptoms.

Post mortem.—The evidences of inflammation were much less extensive than in any of the preceding cases; red dots could be observed on the middle and lower portions of the peritoneum, but the lymphatic effusions were found only in the iliac and hypogastric regions. The heart was in a state of hypertrophy, but not enlarged; the walls, however, of the left ventricle were nearly double their natural thickness—its cavity being of course greatly diminished.

Case VII. Sarah M'Guigan was delivered on the same day, Wednesday, as the preceding female. On the 14th, appeared to be doing very well, but her tongue was yellowish and furred. On the evening of the 15th, had some pain in region of the uterus; tongue continued coated; no fever; pulse 90; milk did not appear in her breast. An active mercurial cathartic, (of calomel and oil,) was given.

Next day, had two bilious stools, but symptoms much the same, except that the pain was diminished, and the pulse was more frequent, being 120; skin moist; some milk in breasts. Gave calomel, gr. x. and opii, gr. ss. This, with the assistance of an enema, caused free evacuations from the bowels. On the 17th, milk and lochiæ increased, but tongue is still furred, and pulse 120. Repeated cal. and op.; this was followed by an enema with advantage.

This patient being free from fever and pain, with a natural, moist skin, healthy expression of countenance, and moderate secretion of milk, nevertheless maintained for several days the fur on the tongue, with little appetite, and the frequent, full, and soft pulse. After the mercurial medicines had been given as above detailed, she was trusted to rest and low diet. She recovered.

The last cases having occurred in rapid succession, it was determined that all the patients yet to be delivered, should be removed to private lodgings. Several of these have been confined without any indications of peritonitis. One patient, however, on the eve of departure was taken in labour.

Case VIII. Margaret Sullivan was delivered at 11 A. M. Saturday, March 16th. She continued comfortable until early Monday, the

18th—milk appearing in her breast on the 17th. On Monday morning was feverish, and complained of some pain in back. Was bled to ℥xv. and took sp. nit. dulc. The expectation was entertained of its being merely the milk-fever; but at 9 P. M. there was tenderness and even pain on pressure over the uterus; pulse 120, with some tension: V. S. ℥xxiv. induced faintness; Dover's powder and calomel were given; fomentations, &c.

Tuesday, 19*th*.—Slept well; milk abundant; lochiæ not quite so copious as before; has still slight tenderness on pressure; pulse 112; had one hundred leeches to groins and hypogastric; Dover's powder and calomel. *Noon*. Pulse 120; tenderness on pressure diminished.

For subsequent history see details, Case VIII. by which it will appear that the milk and lochiæ diminished exceedingly; patient on the 20th became very pallid, and pulse so weak and frequent, 138, that quinine and nourishment were required. Bowels became disordered, to the exhaustion and distress of the patient, the stools were bilious and watery, and the pulse for several days remaining very frequent. Eventually the symptoms of intestinal irritation disappeared, under the use of anodynes and revulsives with chalk, and finally, the rhatany, which last appeared to be very useful in checking the exhausting evacuations, and supporting the general strength. The mammary secretion now returned, and the pulse very gradually became slower; the patient eventually recovered, but was for many days very weak, and her stomach and bowels exceedingly irritable.

I have lately seen her looking pallid, and complaining of occasional uneasy sensations and swelling about the abdomen, apparently from indigestion, but with a free supply of nourishment for her healthy infant.

The wards of the lying-in department were now closed for some weeks.

The following table presents a summary view of the cases detailed. It appears that four of the eight patients were primiparous, and that the average interval between delivery and death in the fatal cases, was 7.2 days. In most of the patients, the disease probably commenced on delivery, but in Cases IV. and VIII. the period of attack was well marked on the day noted. There occurred eight cases, of which five were fatal.

In the endemic of 1830 and 1831, from a statement furnished me by Mr. Malin, it appears that there were thirteen deaths; the average interval between delivery and death being precisely seven days; the shortest interval was three days—the longest ten days.

TABLE II.

Case.	Name.	Age.	Number of labours.	Day of delivery.	Day of apparent attack.	Day of death.	Recovery.	Interval between day of delivery and death.
1	Margaret Riley	32	1	Feb. 12	Feb. 15	Feb. 17		5 days
2	Ellen Lehy - -	26	3	26	Mar. 1	Mar. 4		7 days
3	Martha Viney -	32	2	Mar. 1	2		Recov'd	
4	Catharine Borstall	30	1	6	10	20		14 days
5	Harriet Pitney -	33	2	11	13	16		5 days
6	Mary A. Munhollan	21	2	13	15	18		5 days
7	Sarah M'Guigan	21	1	13	15		Recov'd	
8	Margaret Sullivan	27	1	16	18		Recov'd	

The great fatality of puerperal peritonitis, whether appearing sporadically or epidemically, in private or public practice, is well known. When endemic in hospitals few patients recover—not unfrequently almost every individual perishes. This mortality no doubt partially depends on the predisposing causes, of which, as already acknowledged, we are very ignorant, but which are evidently more influential in hospitals, and other similar situations, and modify, in a most important manner, the symptoms and progress of the disease, as I shall attempt to demonstrate, rendering similar modification in the treatment essentially necessary. The very nature of puerperal fever, being an acute inflammation of a most irritable and extensive serous tissue, spreading over its whole surface with great rapidity, is alone sufficient to account for the severity of the disease, especially when it is remembered that it occurs at a moment when the female system is always preternaturally irritable.

On ordinary occasions, the well known local and general symptoms of inflammation are manifested, so that no doubt remains, as well of the nature of the affection, as of the proper remedies, but when endemic in hospitals, its apparent character is changed—diagnosis is difficult, and the anxious physician, alive to all the responsibilities of his situation, finds the most efficient antiphlogistic remedies unavailing, and even positively injurious in a disease essentially inflammatory. The following circumstances may be mentioned as more or less peculiar in the cases under consideration.

1. The disease was not ushered in by any decided chill, often no cold sensations were experienced; and the subsequent phenomena render it probable that inflammation generally commenced on delivery, although no symptoms were detected before the second or third day.

2. The almost entire absence of fever, that is, of a hot, dry skin, dry tongue, and other indications of the stage of excitement; the surface being usually pallid, with a livid tinge of the lips, cheeks, tongue, nails—also moist, and natural as to temperature. There were some exceptions to this remark, but the observation is correct as regards the most acute cases of the complaint—Case V. Pitney's; Case VI. Munhollan's.

3. The pulse was never corded nor tense. The last patient, Case VIII. Sullivan, had slight tension of the pulse, but not to such a degree as on ordinary occasions to render the lancet essential. In all cases the pulse was at first rather large, soft, and compressible, not calling for, and even forbidding depletion; it was invariably frequent, at once rising to 120, and often could not be numbered towards the termination of the disease.

4. The respiration was much hurried; in one patient, Case II. this was remarkably the case; like that of a person agitated, or exhausted by severe exercise. Connected with this, there were generally, almost universally, a disposition to blueness of the lips, and other evidences of imperfect hematosis.

5. Perhaps, however, the greatest peculiarity of this epidemic was the slight degree of pain experienced. Riley, Case I. suffered the most; yet on the first day she made no complaint of pain; on the second, suffered only when bowels were moved; on the third, had severe pain, but it was completely relieved by V. S. and leeches; on the fourth, it returned and extended to the joints of the extremities, and was greatly aggravated by pressure. In no other patient was pain a prominent symptom; in some it was only produced by pressure, or by motion; and in two patients, Lehy and Borstall, no pain whatever was experienced, nor any tenderness on pressure during the whole course of an acute peritonitis!!

The tympanitic condition of the intestines was much less than usual, particularly in those cases in which there was little or no pain.

6. The almost universal existence of a furred and yellow, ("bilious,") tongue, indicative of visceral disorder, should perhaps be mentioned as a peculiarity. It was found in all the severe cases, and in nearly all who were delivered during the prevalence of the complaint. This derangement of the digestive functions, conjoined with a very irritable condition of the tissues, seemed to constitute that state of the system or organs which predisposes to peritonitis puerperalis, and which, under other exciting causes, as wounds, fractures, &c. gives rise to erysipelas. If so, the frequent conjoint

prevalence of puerperal fever and erysipelas is, in some degree, explained—their predisposing causes being the same.

7. The secretion of bile after the first few days became excessive, and appeared to be the exciting cause of the diarrhœa and vomiting, which were injurious and exhausting. Whether this increased secretion of bile depended on the disease, or on the measures adopted, particularly the exhibition of mercury, or on both, is a question not easily answered.

These peculiarities will explain the difficulty of diagnosis—the inefficiency of the established modes of treatment, and the consequent fatality of the disease.

1. *Difficulty of diagnosis.*—It may be safely asserted, that without the assistance of morbid anatomy, the nature of this disease would have been altogether inscrutable. What practitioner, however experienced in clinical observations, but ignorant of what the scalpel has revealed post mortem of the consequences of this affection, would have suspected a most rapid, acute, and extensive inflammation, involving the whole surface of the irritable and sensible serous membrane of the abdomen, when his patient complained merely of weakness; had no pain, nor even tenderness on pressing and handling the abdomen; no tympanitis; no purging; no dryness nor heat of surface; no tension nor quickness of pulse? The fact that authors have alluded to such cases, would afford but little assistance to the practitioner. In the case of Lehy, for example, the symptoms of disease were imperfect hematosis; rapid respiration, and great frequency of pulse, with diminution of the lochiæ; want of mammary secretion and great sense of debility; symptoms sufficiently decided to indicate dangerous internal disease, but whether of serous or mucous tissues in the abdomen or the thorax, are points which could not be positively determined. The last-mentioned symptoms however, judging from what occurred at the hospital, should, under similar circumstances, be considered as proof of the existence of acute peritonitis, for death unfortunately afforded the opportunity of ocular demonstration.

2. The inefficiency of the established modes of treatment was too certainly exhibited at this period; confirming not only the experience of my predecessors in the hospital, but that also of accoucheurs to lying-in establishments generally. It may be useful to state what I believe to be the result of our experience in the different remedies employed, and then to deduce the practice which would promise most under similar modifications of peritonitis.

1. *Blood-letting.*—General bleeding was tolerated in some of the cases, particularly in the last one, Sullivan's, where there was some

tension of the pulse. It usually moderated, for a few hours, the local symptoms; but as a general observation, it was of no permanent benefit to the local affection, and was often decidedly injurious, by exhausting more rapidly the vital powers of the patient, as indicated by the increased frequency and weakness of the pulse, pallor of the surface, and sensation of weakness.

The same remark was often applicable to leeches, as always moderating, and in one instance, Viney's, apparently subduing the local symptoms, but diminishing the general strength, so that the local affection appeared to spread with much more rapidity. In one case, Munhollan's, no relief was afforded, and the patient complained of being more uncomfortable. On the whole, leeches proved useful, but the evacuation of blood in whatever way effected was injurious when the pulse was rendered softer and more frequent. "As salutary as these evacuations may prove in such cases, (of sporadic peritonitis,) exactly in the same ratio do I consider them injurious in epidemic peritonitis, especially in hospitals—peritonitis from internal causes. In this latter case, so far from procuring relief, they are ordinarily followed by great frequency and smallness in the pulse, a more evident alteration of the features and increased swelling of the abdomen."* Exceptions occurred to this rule of Baudelocque's, but none which would not confirm the observation that sanguineous evacuations are injurious when the pulse does not sanction their employment.

2. *Emetics* were employed occasionally to relieve the stomach of any irritating ingesta, food, bile, &c. but were not relied upon as the efficient means in the management of the disease.

3. *Purging*, as a plan of treatment, failed entirely: in all cases, whether excited spontaneously, or by medicine, it was very distressing and exhausting to the patient, with no apparent amelioration of the symptoms. At the commencement, however, laxatives or enemas to empty the bowels were grateful and beneficial.

4. *Diaphoretics* were of no utility—indeed the patient often perspired with even a natural temperature of the skin, and yet experienced no relief.

5. *Mercury.*—Much was anticipated from the use of this medicine, so valuable in inflammatory affections, especially of serous tissues. Hence, next to blood-letting, our main dependence was placed on its free exhibition; it was resorted to in every case, but on review, I cannot affirm that any good was effected, and perhaps it was even

* Baudelocque, Jr. on Puerperal Peritonitis, p. 346, of Amer. Edition.

positively injurious. Salivation could not be induced: even in the comparatively protracted case of Borstall, where mercury was early, freely, and perseveringly employed, no genuine ptyalism was excited. An aphthous ulceration of the tongue, lips, &c. occurred without swelling of the face, ulceration of the gums, or any inflammation of the salivary glands, and without any mercurial fœtor. The patient appeared to sink more rapidly from this extensive irritation, and from the severely painful affection of the muscles of the forearm, which may possibly have been dependent on the mercurial influence. In Munhollan's case, which was fatal, and in Sullivan's, which was one of recovery, the great distress was from purging of bilious and serous fluids, apparently from the use of calomel; indeed, in all cases, it was disposed to act on the secretions of the abdominal viscera, rather than on the mouth, and had no influence in moderating the disease. Was the increased bilious evacuations in the latter stages of the complaint owing to the inflammation, or the mercury?

6. The *oil of turpentine* was tried, but always excited vomiting, and was therefore abandoned.

7. *Revulsives.*—Fomentations and poultices to the abdomen, extremities, vulva, and mammæ; hot pediluvium; oil of turpentine to body and limbs; warm and mucilaginous injections into vagina and rectum; blisters to the extremities and sometimes to the abdomen, were severally employed, and generally with advantage as secondary remedies. Moist heat, however applied, was generally grateful; but of course had, in so severe a disease, no very decided influence. The blisters were often detrimental by increasing the restlessness of the patient, and preventing sleep. Nothing seemed to be gained by attentions to the mammæ; the application of plasters and poultices or of the child, did not seem to retard the secession of the milk; as the patient was disturbed by the infant, it was soon withdrawn.

8. *Tonics and stimuli* were usefully employed, but not with any idea of curing the disease as has been mentioned, but on another principle presently to be indicated.

9. *Cold.*—The great disappointment experienced in not being able to resort freely in this acute form of peritonitis to general and local bleeding, and in the efficiency of other remedies, early induced me to think of ice to the abdomen as the most promising means for arresting this terrible disease. To this practice I was led by principle, and by experience in analogous affections. For several years, I have taught at the Philadelphia Medical Institute, that the direct influence of cold is universally sedative, as respects the organic actions, to internal as well as to external capillaries, maintaining that cold applied

to the skin does not determine the blood directly to the internal capillaries, but on the contrary, that the same condition of the capillary tissue is induced internally as well as externally, differing merely in degree. It may be useful to add, that the prominent facts on which this opinion of the modus operandi of cold is founded, are its acknowledged and powerful influence in moderating and arresting internal as well as external hæmorrhages; and also the decided benefit so universally experienced by its employment in many deep-seated inflammations of the limbs, of the brain, &c. when of the most acute character. Why then should it not be equally useful in acute peritonitis? I could not detect any satisfactory objection, but on theoretical views, and from experience in all analogous affections, I felt strongly inclined to use it freely and boldly. To this I was still further encouraged, not only by the failure of established modes of treatment, but by the accounts given of two cases of recovery in the Journal of the Royal Society of Medicine of Toulouse in 1827,* where ice was applied, and by the reports of several practitioners in favour of cold cataplasms, cold affusions, &c. In consultation, therefore, with my colleague, Dr. Lukens, it was agreed to employ ice in the next case that appeared suitable. That no bad consequences should result, if possible, from its employment, it was not resorted to until the symptoms were decided, until it was evident that sanguine evacuations could not be further employed, and until the lochiæ and the mammary secretion had ceased. These circumstances existing in Case VI., Munhollan's, ice in cloths and in bladders was applied to those portions of the abdomen which were tender on pressure, while dry heat, blankets, &c. were directed to the extremities, and calomel was freely exhibited with the views already explained. The result was not positively for or against its employment, but to me it was decidedly encouraging; for although the patient died as speedily as in the other cases, yet she was naturally of a delicate constitution, had been the subject of dysentery and bronchitis before and during her confinement, was delivered prematurely of twins, and was at the time the ice was applied much exhausted, (pulse being 144 and very weak,) by the disease and by the leeches, which last appeared to be injurious to the local as well as general symptoms. She had also hypertrophy of the left ventricle of the heart. The ice was agreeable to her feelings, far more so than the turpentine and other revulsives previously employed; it contributed greatly to the relief of her rest-

* Vide North American Medical and Surgical Journal, vol. vi. p. 198. Archives Generales, vol. xvi. p. 136. Baudelocque on Puerperal Peritonitis, p. 400. Am. Ed.

lessness; moderated the local symptoms, and apparently arrested the progress of the inflammation; for, if any correct judgment could be formed from the symptoms, particularly the tenderness on pressure, before and after its application, of the extent of the inflammation, it did not extend on the peritoneum after resort to the ice. *Dissection exhibited a more circumscribed inflammation than in either of the other fatal cases;* the effusion of lymph, &c. being confined to the lower portion of the abdomen, but in the other cases was found over all the viscera, liver and stomach not excepted.

Was not this patient also injured by the calomel, which kept up a distressing purging, and excited no affection of the mouth and salivary glands?

These observations certainly do not afford much encouragement in the treatment of peritonitis puerperalis as modified by epidemic causes, but by exhibiting the difficulties of the case may lead to a more scientific and efficient mode of treatment.

Puerperal fever in the Pennsylvania Hospital was manifestly an acute inflammation of the peritoneum, conjoined with derangement of the chylopoïetic viscera, and occurring in individuals whose systems were preternaturally irritable, and whose vital powers immediately yielded to the severity and extent of the local inflammation.

The important and essential indication is to subdue the local disease, but its fulfilment was rendered fearfully difficult by the prostrated condition of the system. Hence, as frequently intimated, sanguineous depletion, purging, and other antiphlogistic remedies were often detrimental, although temporary relief might be afforded. The general principle I would therefore deduce, is that the vital powers should not be enfeebled under the expectation of curing the local inflammation. If, therefore, the pulse becomes more irritable and frequent from the loss of blood, such evacuations should be abandoned, however apparently useful in moderating the local symptoms, and measures for supporting and invigorating the powers of life, be adopted. This I believe to be a principle of very universal application, but too often, especially at the present day, forgotten—for practitioners, from a laudable desire to overcome the local inflammation, the origo malorum, not unfrequently sacrifice the general strength of the patient.

Antiphlogistic remedies have seldom any other effect than simply to diminish, by a direct or indirect influence, the morbid excitement; the alteration of action, the change from a diseased to a healthy state, is effected almost exclusively by the natural powers of the economy, and demands therefore that a certain degree of power should be pre-

served—patients may be rendered so weak that very slight local disease may destroy them. Surgeons are familiar with these principles, and daily act upon them in the management of suppurating wounds, compound fractures, &c. of long standing, often employing stimulating measures, locally as well as generally.

In all doubtful cases, the first evacuation of blood, if the pulse do not forbid the trial, should be tentative, as advised by Baudelocque, Jr. If the pulse acquire increased volume and tone, and become slower, the evacuations have been useful, and may sometimes be advantageously and even freely repeated. All direct depletion, however, must be effected within the first few hours; evacuations afterwards can seldom be tolerated, but moderate nourishment, tonics, and even stimuli, are demanded, that the patient may not sink from the local affection. These invigorating measures do not apparently augment the local affection.

Sanguineous evacuation being forbidden, or having been carried as far as practicable, the patient must be trusted to local antiphlogistic remedies, operating as sedatives or revulsives, with appropriate attentions to the general system. Judging from the few cases above detailed, and for reasons already advanced, I would prefer the sedative influence of ice to the abdomen as more promising than any other measure hitherto recommended. It certainly deserves a more enlarged and decided trial, having been apparently successful in some few cases on record—being more grateful to the sensations of the patient, and certainly exciting a more powerful influence, whether for good or evil, than any other measure at command. In using it, moderate warmth should be preserved in every other portion of the surface, the bowels be kept at rest by anodynes, the general strength supported by simple unirritating food, tonics, or even stimuli; and any occasional or accidental symptom be appropriately attended to. Should circumstances forbid the use of ice, revulsives alone remain at our command, and should then be resorted to decidedly: a blister to cover the whole anterior and lateral portions of the abdomen can alone be adequate to the emergencies of the case; small blisters are inadequate as revulsives, and probably produce as much general distress as the large one over the abdomen. Although my confidence in mercury is destroyed as a remedy for peritonitis, it perhaps should not be entirely abandoned, as in small and repeated doses with opium, so as to prevent any cathartic effect, it may correct the derangement of the chylopoietic viscera, the integrity of whose functions is so exceedingly important in maintaining the vital powers of the system.

Bleeding, general and local, regulated entirely by the condition of the pulse, especially as regards tension, with the constant application of ice to the abdomen, appear, therefore, to be the most promising remedies for puerperal peritonitis under the direction of a well-instructed and attentive practitioner.

The details of the cases at the hospital, as preserved by Mifflin Wistar, M. D. the house-physician in attendance, are appended, that all the facts may be presented to the profession.

Case I. Margaret Riley, aged about twenty-three years, was delivered, after a healthy labour, of her first child, February 12th, 1833. On the 13th, as she had some fever and a furred tongue, she took a dose of magnesia.

14*th.* Medicine has operated freely, and she is now doing well in every respect.

15*th, about* 3 *P. M.* She was found complaining of great pain and tenderness on pressure over the abdomen; pulse very frequent; bowels have been opened several times during the last half hour. She was immediately raised up in bed and bled till she became faint, and four hours afterwards sixty leeches were applied over the abdomen. Her abdomen was also bathed with warm sweet oil, laudanum, and spirit of turpentine.

9 *P. M.* Feels very comfortable.

16*th.* Tongue dry and very red; great thirst; stomach very irritable; belly more tumid, especially about the epigastrium; no stool since yesterday afternoon; secretion of milk and the lochial discharge are almost suspended. Was directed, Calomel, gr. ¼, Sulph. morphiæ, gr. 1-12, every hour; lime water and milk to be given occasionally, and a blister 6 × 7 inches to be applied to the epigastrium.

3 *P. M.* Pulse 120; great thirst; skin moist; abdomen most tumid about the umbilicus; great tenderness on pressure, especially over the uterus; she complains of very severe darting pain, and has become very anxious about her situation. Directed a mustard cataplasm to be applied over the hypogastrium, to take the cal. and morphia every half hour, and ʒss. spt. nitri dulcis every hour. She was also allowed to hold small pieces of ice in her mouth, which proved very grateful to her.

6 *P. M.* Tongue more moist; pulse 135; complains of difficulty in passing her water. Directed Cal. gr. i., Sulph. morph. gr. 1-6, every half hour—suspending the use of the pills before mentioned. She was permitted to drink mineral water containing small quantities of sup. carb. soda. An injection of Oss. of cold water was also given.

9 *P. M.* Tongue continues moist; pulse 108; lochial discharge and secretion of milk are entirely suspended; has frequent hiccup; bears pressure over the abdomen much better than in the morning. Continue treatment.

17*th,* 6 *A. M.* During the night a blister was applied to each ankle; she slept well; has passed Oj. of urine, and now perspires freely; pulse very weak.

9 *o'clock.* Swelling of the abdomen increases; skin cold and clammy; mind sensible. Was directed to take every hour ℥ss. of the following mixture:—℞. Spt. terebinth. ℥ss.; P. G. Arab. ʒij.; Sacch. alb. ʒi.; Aquæ, ℥vss. She was

also stimulated with wine whey, capsicum, &c.; rub her limbs with whiskey and turpentine.

Noon. Pulse barely perceptible; mind rational.

She died at 3 P. M.

Examination twenty-one hours after death.—On opening the abdomen we found universal peritoneal inflammation, which was very great on the posterior surface of the uterus; the peritoneum covering the anterior surface being less inflamed. The cavity of the abdomen contained a copious sero-purulent effusion, with flakes of lymph floating in it. The substance of the uterus was in a healthy state, but on opening its cavity we found a purulent fluid. The left ovary was very much softened, almost in a state of disorganization; the right one was healthy. The stomach and intestines were healthy; the latter containing natural fæces.

Case II. Ellen Lehy, aged twenty-six, was delivered, February 26th, 1833, after a healthy labour, of her fourth child.

27*th.* Pulse frequent; tongue coated with a white fur; no unusual tenderness on pressure being made over the abdomen; very little milk; lochia as great as usual.

28*th.* Same as yesterday.

March 1*st, about* 4 *A. M.*—She became feverish, and very restless; she stated that about half an hour before she had a chill. She was immediately bled to syncope, and was directed the neutral mixture with small quantities of sulph. morphia.

2*d.* Pulse 120; tongue heavily furred; lochia very slight, but less offensive than yesterday; secretion of milk nearly suspended; skin moist; mind more composed. Directed Calomel, gr. ij., opii, gr. ¼, every two hours; injections of tepid barley water into the vagina; a poultice of bread and milk to each breast, followed by a plaster of cerate, in hopes of facilitating the secretion of milk, and a blister to each ankle.

11 *P. M.* She perspires freely; no tenderness on pressure being made over the abdomen.

3*d,* 7 *A. M.* Has slept well; pulse 120; tongue furred. Directed the common injection.

9 *A. M.* Pulse 120; the injection brought away very little fæcal matter; much flatulency. Directed a wine-glassful of the following mixture every two hours, alternately with the pills above mentioned.—℞. Fol. sennæ, ℥ss.; Pulv. rad. zingib. ʒij.; Aquæ, Oiss.; Inject barley water into the vagina every three hours; she states that it affords her great relief.

Noon. Soon after commencing with the senna tea she began to vomit, the discharge being copious and very bilious. Directed lime water and milk; small pieces of ice to be held in the mouth.

5 *P. M.* Within last hour her pulse has become more feeble; skin cold; vomiting, which had been relieved, has now returned with great violence. Directed Pulv. ipecac. ℈j. which in half an hour produced copious bilious vomiting, after which she experienced great relief. The retching continuing, a pill composed of opium, gr. j. was given alternately every half hour with sup. carb. soda, gr. v. The clove tea was also resorted to, and a mustard cataplasm applied over the epigastrium.

10½ *P. M.* Vomiting returns at intervals; very little tenderness on pressure being made over the abdomen. Discontinue the opium, of which she has taken gr. vj., and let her take sulph. morphia, gr. ¼. in solution, repeating in half an hour; apply a blister 5 × 6 inches over the epigastrium.

4th, 5 A. M. During the night her strength failed so much as to render it necessary to resort to carb. ammon. and wine whey, brandy punch, &c.; she is now delirious; pulse very feeble.

8 *A. M.* Pulse almost imperceptible. Directed sulph. quinine, gr. j. every half hour.

She died at 1½ P. M.

Examination eight hours after death.—The whole surface of the peritoneum was highly inflamed, especially on the posterior surface of the uterus. Lymph had been thrown out so freely as to form in many places for several inches in length a false covering for the intestines. The substance of the uterus was healthy, as were also the ovaries. The mucous surface of the stomach, with the exception of small patches of inflammation near the pylorus, exhibited a healthy appearance. The intestinal canal was filled with a dark-green fluid. The cavity of the abdomen contained a sero-purulent fluid similar to that met with in the former case.

Case III. Martha Viney, aged twenty-two years, was delivered of her first child, March 1st, after a very healthy labour.

2d, about 9 A. M. I was called to see her, and found her complaining of a general feeling of uneasiness; pulse 110; tongue coated with a white fur; no tenderness on pressure being made over the abdomen. Directed a mustard pediluvium, to be used in a recumbent posture; a warm poultice to each breast, and to take Calomel, gr. v., opii, gr. j. immediately.

3d. Has slept well; pulse 110; tongue furred; abdomen tender on pressure, especially over the uterine region. Directed Calomel, gr. v. to be followed in three hours by an ounce of castor oil. Bathe the abdomen with warm laudanum, &c.

Noon. Abdomen more tender. Apply one hundred leeches over uterine region.

6 *P. M.* Much easier since the application of the leeches. Directed Calomel, gr. ij., Pulv. Dover. gr. v. every two hours until she sleeps.

4th. After taking two powders she slept well during the night; pulse 110; tongue furred; very little tenderness on pressure being made over the abdomen; milk and lochia, which for the last thirty-six hours have been very deficient, are now fast increasing in quantity. Apply a warm covering of cerate to each breast in order to facilitate the secretion of milk.

5th. Pulse 100; tongue cleaning; milk and lochia both increased in quantity; skin is dry. Directed Spt. nitri dulcis, ʒj. every two hours.

6th. No tenderness on pressure over the abdomen; pulse 96; tongue cleaning; milk increasing in quantity; lochia less. Directed nitre to be continued, and an injection to open her bowels.

7th. Pulse 90; in other respects same as yesterday. Directed Elix. vitriol, gtt. xij. twice a day.

9th. Gradually gaining strength.

18th. Doing well in every respect.

25*th*. Continues well.

Case IV. Catherine Borstall, aged thirty, was delivered, March 6th, after a healthy labour, of her first child.

She did well until March 10th, when, on the forenoon of that day, she began to complain of griping pains, attended with tenderness over the abdomen; tongue coated with white fur; pulse 100; milk and lochia as great as usual. Directed an anodyne injection; one hundred leeches to be applied over uterine region, and the abdomen to be bathed with warm laudanum, &c. as used in the previous cases.

2 *P. M.* Feels much easier. Directed Pulv. Doveri, gr. x., Calomel, gr. ij. every two hours.

6 *P. M.* Tongue inclined to be dry in the centre. Discontinue powders; let her take castor oil, ℥j.

10 *P. M.* More fever; medicine operating freely. Was bled until she became faint, which occurred after the loss of ℥xx. of blood.

11*th*. Much better.

12*th*, 7 *A. M.* No change in her pulse; but she states that she felt much more comfortable; oil produced several evacuations during the night. Directed an anodyne injection.

13*th*. Pulse 110; tongue furred; very little tenderness over abdomen. Directed a dose of magnesia, to be followed after it has operated by an anodyne injection.

Noon. More fever. Directed v. s. ℥xiv. and the abdomen to be bathed with warm laudanum, &c.

14*th*. Has slept well; pulse 120; tongue furred; milk and lochia much diminished in quantity. Directed the following pills:—℞. Pulv. ipecac. gr. ij.; Pulv. opii, gr. ij.; Calomel, gr. xij. M. et div. in pil. No. xij. Sig. one every two hours.

6 *P. M.* No tenderness of the abdomen; pulse very weak. Directed weak wine whey; continue pills.

15*th*, 2 *A. M.* Very restless; respiration difficult; pulse 120. Directed a blister to each ankle, and about 8 o'clock it became necessary to stimulate her with carb. ammonia, spirit of turpentine; egg and wine.

Noon. No change.

7 *P. M.* Pulse 120; tongue moister; abdomen more swelled, but not tender.

10 *P. M.* Directed Calomel, gr. iv., Sulph. morph. gr. 1-12, every two hours, instead of those before mentioned; rub Ung. merc. fort. on inside of thighs; continue stimuli, and rub abdomen with lin. saponis and spt. terebinth.

16*th*, 7 *A. M.* No change. Continue treatment.

Noon. Has had one watery stool, of a yellowish-green colour.

7 *P. M.* Pulse stronger, 120; tongue moister. Directed an injection of Oj. of cold water.

10 *P. M.* Very stupid; tongue dry. Suspend the use of calomel and morphia; rub the abdomen with Ung. merc. fort.; give her Calomel, gr. iv. every two hours.

17*th*, 7 *A. M.* Has passed a sleepless night. Continue treatment.

7 *P. M.* Bowels have been frequently opened during the day, discharges being small, bilious, and attended with considerable pain; gums are evidently

affected by the mercury. Directed chalk mixture, with sulph. morphia, pro re nata.

18*th*, 7 *A. M.* Delirious; pulse weak, and very frequent. Continue treatment.

Noon. Weaker. Directed stimuli to be resorted to more freely.

7 *P. M.* Mouth very sore; complains of general pain and soreness. Discontinue mercurial frictions.

19*th*, 7 *A. M.* Mind more rational; pulse same as yesterday. Directed poultices to the parts which have been rubbed with the mercurial ointment.

Noon. Has had a very healthy discharge from her bowels.

7 *P. M.* Much weaker. Continue stimuli.

20*th*, 7 *A. M.* Pulse almost imperceptible; complains a great deal of a general feeling of soreness over her body, especially where the mercurial ointment has been applied; mouth very sore; mind rational. Directed an infusion of red bark, to be mixed with an equal quantity of lime water, and let her take it ad libitum. As her bowels have been several times opened, (discharges watery, bilious hue,) the morphia has been resorted to in larger doses.

Noon. Has had the usual bilious vomiting several times during the morning. She died at 8 P. M.

Examination thirteen hours after death.—The peritoneum covering the posterior surface of the uterus was more inflamed than the anterior, as occurred in the previous cases. The liver had a very thick covering of lymph, especially on its right side. The abdominal cavity contained about three quarts of a seropurulent effusion. The large intestines contained healthy fæces, closely resembling in their appearance the discharges of young children. The liver and gall-bladder were in a healthy condition.

Case V. Harriet Pitney, aged thirty-five, was delivered, March 11th, after a healthy labour, of her second child.

12*th*. Doing well.

13*th*, 11 *A. M.* Found her abdomen tender on pressure, especially over the uterine region; milk very small in quantity; lochial discharge slight, but of a good colour; pulse 120; tongue coated with a white fur. Was directed an ounce of castor oil; and one hundred leeches to be applied over the uterus.

5 *P. M.* She became very faint after the application of the leeches, and vomited freely. Directed Pulv. Dover. gr. x., Calomel, gr. ij.

14*th*, 7 *A. M.* Has slept well; pulse 125; abdomen tender and more swelled; tongue coated with a white fur; milk and lochia nearly suspended. Directed Calomel, gr. x. now, and gr. x. more at 1½ P. M.; one hundred leeches to be applied over the uterine region, and a blister to each ankle.

4 *P. M.* She vomited the first dose of calomel, but retained the second; abdomen less tender; breathing freer; pulse 138. Directed a pill composed of calomel, gr. x. and the common injection.

6 *P. M.* Pulse 144. Directed Calomel, gr. v.; opii, gr. ¼. every two hours; the common injection to open her bowels; a blister to be applied to each wrist, and her abdomen to be rubbed with ung. merc. fort.

10 *P. M.* Lochia slightly increased in quantity; abdomen more tender, her bowels have been opened several times, discharges watery, of a yellowish-green colour. Apply a poultice of bread and milk to the vulva, as she states that warmth to that part gives her relief.

15*th*, 7 *A. M.* Has passed a very restless night; pulse 140; blisters have drawn well; complains of great debility; mind rational; very anxious about her situation. Directed the pills to be discontinued, and ordered wine whey and carb. ammon. and spt. turpentine, &c.

Noon. Pulse very feeble; mind sensible.

7 *P. M.* Delirious; pulse still weaker.

10 *P. M.* Directed Ung. merc. fort. to be applied over blistered surfaces on her arms and legs, and the lower half of her abdomen to be covered with a blister.

16*th*, 7 *A. M.* Pulse nearly imperceptible; delirious.

She died at 10½ A. M.

Examination seven hours after death.—The peritoneum was highly inflamed, especially over the posterior surface of the uterus, and around the liver, which places were thickly coated with lymph. Extensive effusion of a sero-purulent fluid had occurred in the cavity of the abdomen. The substance of the uterus was healthy, but its cavity contained a sero-purulent fluid. The ovaries, especially the right one, were highly inflamed. The stomach contained a large quantity of a dark-green fluid, similar to that found in Case II.

Case VI. Mary A. Munhollan, aged twenty-one, was delivered, March 13th, after a healthy labour, of twins—it being her second pregnancy.

14*th*. Doing well.

7 *P. M.* Pulse natural; tongue furred; some fever; lochia as great as usual. Directed Calomel, gr. x. to be followed by an ounce of castor oil.

15*th*, 6 *A. M.* Pulse has within last hour become much more frequent, 120; tongue coated with a white fur; no milk; lochia, very slight; some tenderness over uterine region. Directed an ounce of Epsom salt, and twenty Spanish leeches to be applied over the uterus.

9 *A. M.* The leeches have afforded but little relief; pulse 120. Directed Calomel, gr. ij. every two hours.

Noon. Bowels have been opened several times during the morning, discharges watery, and of the usual bilious hue.

3 *P. M.* Complains of coughing at intervals; pulse 138. Directed the pectoral mixture pro re nata.

16*th*, 7 *A. M.* Complains of pain in both iliac regions, especially the right; pulse 144; tenderness over abdomen increases; mind more cheerful. Apply fifteen Spanish leeches to the iliac regions.

Noon. Apply cold to the abdomen; resorting to ice as soon as she can bear it conveniently.

3 *P. M.* Bowels have been opened several times. Directed an anodyne injection.

6 *P. M.* She has derived but little benefit from the leeching; says the ice feels very comfortable, being far more agreeable than warm applications. Directed Sulph. morph. gr. ¼. Continued pills and ice.

10 *P. M.* Directed Calomel, gr. iv. every two hours. Discontinue the calomel pills before mentioned, and give her a table-spoonful of the following mixture every two hours:—℞. Mist. neutral, ℥vj.; Spt. nitri dulcis, ℥iss.; Sulph. morph. gr. j.

17*th*, 7 *A. M.* Has slept tolerably well, but has had four watery stools. States

that the ice is very agreeable to her; pulse 128; continue pills, but stopt the mixture, as it offends her stomach. During the night she took small quantities of morphia to check the purging, which gave her great pain. Directed Camphor, gr. iij. every two hours, and egg and wine; Sulph. morphia pro re nata. Continue pills.

7 *P. M.* Calomel has purged her several times, which was relieved by anodyne injections. Directed the cretaceous mixture, wine whey, &c. Rub the mercurial ointment on the arms and legs.

18*th*, 7 *A. M.* During the night her bowels were opened several times, and she was attacked with bilious vomiting, which we endeavoured to check by the cretaceous mixture, peppermint, and sulph. morph. She is now sinking fast. Directed wine whey, quinine, and capsicum, with brandy punch.

Noon. Owing to the irritability of her stomach, all the medicines are discontinued; she at intervals complains of acute pain over the abdomen; pulse almost imperceptible; vomiting continues; purging has ceased; mind rational. Ice was removed this morning since she complained of it. Bathe the abdomen with spt. of camphor. She died at 4 P. M.

Examination sixteen hours after death.—The peritoneal coat of the uterus, Fallopian tubes and ovaries, was highly inflamed. The cavity of the abdomen contained a dark-green fluid. The substance of the uterus was in a healthy condition. The ovaries were highly inflamed, but the phenomena of inflammation were exhibited in a much lighter grade than in any previous case. The peritoneal coats of the liver and stomach were healthy, but the mucous surface of the latter presented several patches of inflammation. The liver and gall-bladder were in normal states.

Case VII. M'Guigan was delivered, March 13th, after a healthy labour, of her first child.

14*th*. Doing well.

15*th*, *about* 6 *P. M.* She began to complain of pain over the uterus; no milk; lochia as great as usual; pulse 90; tongue coated with a white fur. Directed Calomel, gr. x., Opii, gr. ss. to be followed by a dose of castor oil.

16*th*, 7 *A. M.* Has slept well; medicine has produced two healthy stools; pulse 120; lochia less; secretion of milk very slight. Directed Calomel, gr. x., Opii, gr. ss. and the common injection to open the bowels.

7 *P. M.* Bowels have been freely opened; discharge healthy.

17*th*, 7 *A. M.* Has slept well; milk and lochia increasing in quantity; tongue still furred. Directed Calomel, gr. x., Opii, gr. ss.

7 *P. M.* Directed common injection.

18*th*. Injection operated; symptoms improved, but tongue still furred, and pulse frequent.

25*th*. She recovered; convalescence however was slow.

Case VIII. Mary Sullivan was delivered, March 16th, after a healthy labour, of her first child.

March 18*th*. During the morning, as she was somewhat feverish, she was bled ℥xv. About 9 P. M. she began to complain of pain and soreness over the uterine region; pulse 120; tongue coated with a white fur. She was immediately raised up in bed and bled until she became faint, which took place after the abstraction of ℥xxiv. of blood. Directed Calomel, gr. vj., Pulv. Dover, gr. x.

19th, 7 A. M. Has slept well; secretion of milk very copious; lochial discharge less than yesterday; pulse 112; tongue moister; tenderness over uterine region much relieved by the last bleeding, but still complains on pressure being made over the abdomen. Directed Calomel, gr. vj., Pulv. Doveri gr. v. every three hours; apply one hundred leeches over the uterus and to the groins.

Noon. Pulse 120; abdomen less tender; bowels not opened since yesterday morning. Directed an injection to open her bowels, and to have the vulva washed with warm water. Continue calomel and Dover's powders.

8 *P. M.* Feels no pain. Her bowels have been opened a second time by an injection. Discontinue calomel and Dover's powders. Morphia p. r. n.

20th, 7 A. M. Has slept well; pulse weak, 138; tongue furred, but moist; tenderness over the abdomen very slight. Directed Sulph. quinine, gr. j. every three hours; chicken water ad libitum.

Noon. Bowels have been opened several times during the last hour, discharges watery and bilious, without pain however. Directed the quinine to be taken every two hours.

4 *P M.* Bowels have been opened twice since noon; milk and lochia decreasing in quantity. Directed in addition to the former treatment, a tablespoonful of the cretaceous mixture every half hour, an anodyne injection, and the application of a poultice to the vulva, with a view of increasing the lochia.

7 *P. M.* Pulse 120; skin dry; very anxious about her situation; has had several stools, which were attended with considerable pain. Discontinue pills of quinine. Directed Spt. nit. dulc. ʒj. every hour. Continue morphia and cretaceous mixture.

21st, 7 A. M. Bowels have been opened several times during the night; milk and lochia are almost suspended; pulse very frequent; no tenderness of abdomen, except for a short time after her bowels have been opened. Directed Creta. ppt. ʒj. every two hours; an injection, Sulph. zinc. ϑj. to a pint of water. Let her drink freely of chicken soup.

Noon. Bowels have been opened several times; discharges consist of bloody mucus, mixed with small portions of fæcal matter; no tenderness of the abdomen.

7 *P. M.* Purging continues. Directed an injection of a gill of flaxseed tea with ℥ss. of lard, and twenty drops of laudanum; continue chalk mixture; give ext. rhatany every two hours alternately with the chalk mixture; let her drink freely of chicken water, wine whey, &c.; morphia pro re nata; inject barley water into the vagina every few hours.

10 *P. M.* Secretion of milk more copious; pulse 110; tongue rather dry.

22d, 7 A. M. Has slept well; only one stool during the night; milk has returned to a considerable extent, but lochia is very slight; pulse soft, 104; tongue moister; mind more cheerful; appetite good. Continue treatment.

7 *P. M.* No change since morning.

23d, 7 A. M. Has slept well; milk in good quantity; lochia slight; has had one healthy stool; pulse 104; tongue cleaning off.

24th. Continues doing well. Continue treatment.

ART. IV. *Notice of an Experiment on the Vascular Connexion of Mother and Fœtus.* By W. E. HORNER, Professor of Anatomy in the University of Pennsylvania.

A WHITE female, aged twenty-four years, being in the ninth month of pregnancy, died, April 25th, 1833, at the Philadelphia Almshouse. The next day, in the presence of several of the physicians and students, I injected through the aorta one gallon of the saturated solution of prussiate of potash, and afterwards an equal quantity of a saturated solution of sulphate of iron. The injection penetrated minutely, and the precipitate of Prussian blue was visible in many points of the skin, having imparted a deep tinge to the face. The uterus being exposed after a few minutes, the uterine arteries were found well injected, but the injection did not reach the umbilical chord as was ascertained by inspection; and also by chemical tests applied by my young friend, Dr. GODDARD, who afforded me much assistance in the whole process, and to whose manipulations and suggestion I was indebted for the injecting articles used.

Having removed the uterus, and conveyed it to the University, I resumed the experiment the next day in the presence of a large concourse of students and several practitioners. All the vessels of the umbilical cord were first injected with a saturated solution of bichromate of potash, and then with a saturated solution of sugar of lead; a beautiful yellow precipitate, the bichromate of lead, occurred wherever the injection reached. I then injected the uterine sinuses with the prussiate of potash and sulphate of iron, as on the day before. The umbilical vessels were then filled with plaster of Paris coloured yellow, and the sinuses of the uterus with the same coloured blue, the latter vessels received readily eighteen ounces of the plaster.

A short time having been allowed for the setting of the injection, I then cut into the substance of the uterus and placenta. No yellow vessels marking the presence of the bichromate of lead were found in the substance of the uterus. The placenta was much infiltrated with the prussiate of iron, which had passed from the vessels of the uterus, and quantities of plaster were found in the cavity of the latter. It may also be mentioned, that in the progress of the injection into the uterine sinuses, the membranes were raised from the uterus in vesications.

The parts were then put aside for future examination. The uterus being distended, it was sufficiently dried in a fortnight for further inspection, upon which I could not still find any blue injection in the umbilical vessels of the placenta, or yellow injection in the vessels of

the uterus. The placenta was however coloured alternately yellow and blue, in a manner somewhat determinate. As an incision had been made through its middle, the cut surface formed a plane, consisting of two parts closely interlocked, one fœtal and the other uterine, each being designated by its yellow or blue colour. The interlocking bore some resemblance to that of the fingers when they are thrust in longitudinally between each other to their roots: the portions penetrated alternately, the fœtal colour to the base of the placenta, and the uterine colour almost to the summit of the placenta. The appearance would perhaps be better designated by the terms uterine lobes and fœtal lobes mutually and alternately interlocking.

From the result of this injection, it would appear, that though there is a want of continuity as commonly thought between the maternal and fœtal vessels, yet particular portions of the placenta can be readily infiltrated by an injecting matter from the uterine vessels, and would therefore seem to have a more intimate connexion with the uterus; not however by distinct cylindrical vessels passing from the uterus, but rather by the orifices of the uterine sinuses attaching themselves to these portions, and being stopped by them.

The infrequency of opportunities of trying a similar experiment on the human subject, will be perhaps a sufficient apology for narrating the circumstances of a single observation.

ART. V. *Case of Aneurism of the right Subclavian Artery, in which that Vessel was Tied within the Scaleni Muscles.* By VALENTINE MOTT, M. D. Professor of Pathological and Operative Surgery in the College of Physicians and Surgeons, New York.

IN the early part of September, 1831, I was requested to visit Mrs. B——, a lady, twenty-one years of age, in reference to a tumour situated in the lower part of the neck. The history of the case was briefly as follows:—A year or two before, she had been thrown from a gig, and received a violent contusion of the right shoulder and left side of the body, from which she had gradually recovered with the exception of a fixed pain in the injured shoulder and the subsequent appearance of a small throbbing tumour above the collar bone. Her physicians had informed her of its character, and the object of her visit to New York was to place herself under my care and abide by my judgment. On examination, I found a tumour as large as a hen's

egg on the outer edge of the scaleni muscles, and immediately over the subclavian artery. Its pulsations were unequivocally aneurismal, and left no hesitation as to the correctness of the opinion already given on the nature of the disease. Her general health was considerably impaired, and the tumour was rapidly increasing in size.

With no other precedent than Dr. COLLES' case,* and aware of the uncertainty that must ever attend the result, of putting a ligature amidst large collateral branches upon a great vessel so near the heart, I deemed it a duty to explain to my patient, her husband and her friends, the critical situation in which she was placed, and leave it for them to decide on the course to be pursued. In a few days I was informed of her resolution to take the chances of the operation, and fixed on the 22d of September for its performance.

At 12 o'clock on that day she was placed upon a table, having taken an hour previously sol. sulph. morph. gtt. xx. The shoulders were elevated by pillows, with the head thrown backward, and the face and body inclined to the left side. An incision was began at the lower part of the outer edge of the sternal portion of the mastoid muscle, and carried upwards about two inches, and another from the commencement of the first along the upper surface of the clavicle of the same extent. The triangular flap, and a corresponding portion of the platysma myoides with its investments, were separately dissected from their connexions and turned aside. The clavicular portion of the mastoid muscle was next severed immediately above its insertion and reflected upon the neck. This laid bare the deep-seated fascia, which was raised with the forceps and divided a little below the course of the omo-hyoid muscle and outside of the deep jugular vein. Upon enlarging this opening an inch downward, the adipose and cellular tissues were readily pushed aside, and the scalenus anticus exposed to view. Desirous of tying the artery, if admissible, on the acromial side of this muscle, I passed a finger carefully down upon its outer edge, but found from the vicinity of the tumour, that it would be best to secure it on the tracheal side, and avoid all disturbance of the parts in that situation. Accordingly, the cellular substance was separated with the fingers and handle of the knife, and the subclavian exposed just within the thyroid axis, the branches of which could be plainly seen. The filamentous tissue was raised from the artery with the forceps, and cautiously divided with a small scalpel, and the ligature conveyed under the vessel from below upward

* The patient died on the eighth day after the operation. See the particulars, in the Edinb. Med. and Surg. Journ. for January, 1815.

by the American needle. In accomplishing this part of the operation, curved spatulas were used to separate the wound, and a blunt hook to draw the deep jugular towards the trachea. The knots were readily made with the fore-fingers. Pulsation in the aneurism and vessels of the arm immediately ceased.

The detached parts were restored, and the integuments retained by the interrupted suture and adhesive straps. Three small arteries were tied—no vein was cut that required a ligature—about four tablespoonfuls of blood might have been lost.

Dr. VACHÉ assisted me in the operation, and it was performed in the presence of Drs. PARKIN and HOWARD, and a number of my pupils. The patient sustained it remarkably well, and did not evince any particular sensation or effect when the artery was tied.

Evening. Has vomited several times, which she attributes to the morphium taken in the morning; right hand and arm warmer than natural; has a little reäction of the heart and arteries; complains of pain in the right arm and side of the neck; radial artery feels full, but has not any pulsation in it.

23*d, morning.* Passed a comfortable night; the vomiting was allayed by mint tea; arm warmer than natural, and feeble pulsation in the radial artery; pulse 88, soft; still feels pain in the arm and neck.

Evening. Complains of head-ache; pulse the same; skin moist and not heated; temperature of both arms alike, counted eighteen feeble pulsations in the right radial artery. The pulsation of the carotids being unpleasant, recommended the head and shoulders to be elevated on pillows.

24*th.* Pain in the neck and arm less than yesterday; head-ache continues; skin natural; tongue a little furred; temperature of the limb natural; pulse the same; counted nine or ten pulsations in the radial artery in a minute, but more feeble than yesterday. Directed a Seidlitz powder to be taken at intervals until the bowels are moved.

Evening. The aperient has operated but once; pulse 70; only a slight tremulous motion to be felt in the radial artery; has had several turns during the day of cool hands and feet, followed by flushes of heat, and attended with some feeling of weight about the chest; violent pain in the head, with a flushed countenance; pain in arm less, and in both arms alike. Took eight ounces of blood from the left arm, which relieved her unpleasant feelings immediately.

25*th, morning.* Has slept but little during the night, notwithstanding the relief afforded by the bleeding. Complains of pain through the upper part of the right shoulder and base of the scapula, and occasional sensation of a tingling or creeping motion in the arm to a

painful degree; pulse 80; skin natural; no distinct pulsation in the right radial artery, but tremulous as yesterday. Seidlitz powders to be repeated.

Evening. The medicine has operated freely; has had some sleep; head-ache much less; pulse 80; skin moist and natural. Complains of great pain in the upper part of the right arm, also deep in the neck and extending to the spine, between the scapulæ; says she has pain in swallowing and in taking a full inspiration. Advised her to take seven drops Sol. acet. morph.

26*th, morning.* Has slept well and feels much better; breathing good; head, back, shoulders, and arm free from pain; pulse 80; skin natural and moist; tongue white. Pulsation in the radial artery more distinct; counted forty-one beats in a minute.

Evening. Says she has passed a very comfortable day. No alteration since the morning. Directed ten drops of the Sol. acet. morph. at bed-time.

27*th, morning.* Did not pass as good a night as the preceding; pulse 74; arm and body of natural temperature; pulsations of the radial artery fifty in a minute.

Evening. About the same as in the morning; bowels have been moved by some ripe fruit eaten during the day. Ordered thirteen drops of the morphine at bed-time.

28*th, morning.* Feels much better; very little pain in the shoulder, and none in the arm; pulse 79; pulsation in the radial artery more distinct, and beats sixty-one in a minute.

Evening. Only complains of a trifling pain in the shoulder, such as lying in one position occasions; pulse 75; in the right arm 71 distinct beats in a minute. The wound discharging a little sanious fluid unpleasant to the patient, removed the bloody lint and part of the plasters, and redressed the wound; it looks very well.

29*th, morning.* Omitted the morphium last night and slept well; is in all respects better; pulse 72; in the right arm 69.

Evening. The same as in the morning; number of pulsations in both arms alike, but much more feeble in the right.

30*th, morning.* On being carefully raised up in the bed in order to take nourishment, after a little irritation from the absence of the nurse at the moment when wanted, she suddenly called out to a relation in the room and said that she was bleeding. About two table-spoonfuls of dark-coloured blood was slowly discharged. It ceased on a little pressure; pulse 76 in both arms; removed the lint, and dressed the lower part of the wound, which looks well; gave eight drops of Sol. acet. morph.

Evening. At eight o'clock, four table-spoonfuls as near as could be judged were again discharged from the wound, and at 12 perhaps a tea-spoonful more. It was of a dark colour, and was readily checked by pressure.

October 1*st.*—Feeling sick at the stomach this morning, some Cologne was poured over the epigastric region, which immediately occasioned a chill that lasted half an hour. During it she vomited several times. Considerable increase of heat and other attendants of the hot stage continued during the day. Pulse 100 in both arms.

Evening. Febrile disturbance still continues; pulse the same; no further discharge of blood from the wound.

2*d, morning.* Complains of soreness of the throat; febrile excitement still continues; pulse 110, rather tense; directed Epsom salt in Seidlitz powders.

Evening. Salts have operated twice, and she feels better; has had several rigors during the day, and vomited several times; pulse 104, somewhat tense; took ℥xviii. blood from the left arm with manifest abatement of the symptoms; the blood upon standing exhibited strong evidences of inflammatory action; it was very buffy and much cupped.

3*d, morning.* About 10 o'clock last night had a trifling oozing of blood from the wound, after a hard turn of hawking; was comfortable afterwards, but did not sleep much; complains of head-ache; for two hours past, has been in a free and easy perspiration; pulse 100, soft; says her throat is very painful in deglutition; the left tonsil is swelled; directed a dose sulph. magnesia.

Evening. Has had a severe ague which lasted about fifteen minutes, during which she vomited; heat that followed very considerable; perspiration very copious for several hours; wound has discharged a small quantity of blood twice since morning; medicine has operated on the bowels; pulse 108; febrile heat much less. Whilst sitting by the bed-side and preparing to dress the wound, four table-spoonfuls at least of florid arterial blood was suddenly discharged; on removing the plasters and lint it as suddenly ceased.

4*th.* Between the hours of four and five A. M. had an ague which continued half an hour, accompanied with vomiting, heated skin, and profuse perspiration. Delirium commenced with the chill, and continued more or less until ten o'clock. Directed to take on the subsidence of these symptoms, one tea-spoonful of the following medicine every hour until another chill supervened.

℞.	Sulph. quinine - - -	grs. xxiv.	
	Acid. sulph. arom. - -	℥ij.	
	Sirup simplex - - -	℥iij.	M.

In the afternoon between four and five o'clock, a slight chill came on, attended with vomiting; the fever which supervened was mild, and early in the evening the quinine was resumed. At 10 P. M. the wound was dressed; looks very well; no bleeding since last night; pulse 100.

5*th.* Had a slight chill about midnight, and is now, 10 A. M. labouring under a similar one; pulse 110. The bitterness of the preparation of quinine being very offensive to her, ordered instead of it one grain of the sulphate in pill every hour, as soon as perspiration came on. Dressed the wound; two tea-spoonfuls of blood appeared to have been discharged; says her throat is much better, and a cough which was quite harassing yesterday has left her.

Evening. Has had her clothes changed, and been removed into a clean bed; perspiration left her in a great measure about noon, and she has had a refreshing sleep.

6*th, morning.* Passed an excellent night; towards morning had slight sensation of the chill and much less fever; pulse 108; directed more nourishment to be given and the quinine continued.

Evening. Has had still less chill and fever in the early part of the afternoon; dressed the wound; compress stained with perhaps a table-spoonful of blood.

7*th.* Had a very comfortable night; feels but little pain in the shoulder this morning; tongue beginning to clean off; has not had any ague since yesterday; feels some appetite; pulse 100. Quinine continued.

8*th.* In all respects better; had a slight sensation of coldness this morning; fur upon the tongue much cleaned off; appetite greatly improved; no bleeding since the evening of the sixth; wound looks well; all of it healed except a small part above the clavicle through which the ligature passes; pulse 104; continues the quinine.

9*th.* In the early part of last evening, after a quiet day, she was attacked with hæmorrhage. The discharge was sudden, and to the amount of a pint; it stopped spontaneously. The effect was great and alarming; she was pale, cold, almost pulseless, when I reached her. In about an hour she rallied, but was restless and disturbed; any form of anodyne was declined. About midnight three or four table-spoonfuls more of blood were lost.

At six o'clock this morning, a profuse gush took place, accompanied with a jet, and whizzing noise; I thought it the moment of dissolution; she again revived. Her mind is calm, and she is resigned to the event; no more hæmorrhage occurred. She lived until the afternoon of the tenth, and died without a struggle.

New York, 25 Park-Place, June 6th, 1833.

ART. VI. *Further Cases and Observations relative to Rheumatism.* By J. K. MITCHELL, M. D. one of the Physicians of the Pennsylvania Hospital.

SINCE making the former communication on rheumatism,* I have been able to collect a number of cases so illustrative of the truth of the new theory, and so confirmatory of the superiority of the spinal treatment, as to justify a new appeal to the attention of the profession.

CASE I. On the 5th of October, 1831, as Dr. PARKER, of Elkton, Maryland, was driving his carriage down a slight declivity, his horse fell, and he was thrown out in such a manner as to alight on the back of the neck and shoulders. He was instantly paralyzed, *partially* in the hands and arms, and *totally* in the lower extremities. On the following morning there was great pain in the *hands* and *wrists*, with swelling, heat and redness, exactly such as is observed in acute rheumatism. The pain in the hands and wrists was always abated by remedies applied to the affected part of the spine, and aggravated by pressure or rough friction there. The doctor had been subject some years before to rheumatism in the arms, side, and hip, and was able to recognise in this attack the same phenomena. While the rheumatic affection after the fall existed, it exhibited the translateable quality so characteristic of rheumatism, attacking sometimes one arm, sometimes the other, but never passing to *any other part* of the body.

Remarks.—In this case, reported by my friend, Dr. EVANS, of Elkton, with the approbation and concurrence of Dr. PARKER, we have the highly respectable testimony of both, to the opinion that the injury of the spine produced the affection of the upper extremities, and that that affection was in all respects similar to rheumatism.

If it is objected that the hands and wrists might have received simultaneous injury by the fall, the objection is obviated by the fact, that at any subsequent period, pressure or rough friction at *the spinal seat* of injury aggravated or reproduced the tumefaction, pain, and redness of the extremities.

In this case then, we have an obvious spinal cause producing rheumatism in the upper extremities, a rheumatism characterized by pain, heat, redness, tumefaction and translation.

CASE II. Reported by Dr. LAMB, of Frankford.—On the 1st September, 1832, W. W. was attacked with acute rheumatism of the left arm and shoulder, which before the visit of Dr. L. was treated

* American Journal of the Medical Sciences, Vol. VIII. p. 55.

with liniments, sinapisms, &c. without relief. On the 7th Dr. L. saw the case which still presented the acute symptoms, and for which he applied, in the course of the spinous processes of the upper vertebræ, twelve cups, after scarification. "The relief was instantaneous and complete. The arm could be immediately extended and flexed without pain. The swelling subsided gradually, and at the end of a week, the patient was able to resume his usual occupation, and remains well to the present date."

Case III. Reported by Dr. Joseph Warrington, of Philadelphia.—"Elizabeth Turner, aged sixteen, was seized with slight pain and swelling in the right ankle. Finding the circulation active, I took blood from her arm, and, for inactive bowels, ordered a dose of rhubarb and magnesia. On the following day the blood taken indicated an inflammatory condition. Although the medicine had operated, her case was worse. She cried with pain, and was unable to turn in bed without the most tender assistance. *Both* ankles looked inflamed, and were too painful to admit of the slightest touch. I ordered fifteen cups with scarification to the lumbar spine—eighteen were applied. On the following day she was able to turn herself in bed, on the day after that she sat up, and in four days more was able to remove to the distance of six squares without inconvenience. She has since continued free from the disease."

In a note appended to this case Dr. W. says that he has found "much good to follow" the use of the spinal treatment of rheumatism, but has not *always* succeeded in effecting a cure by it. This regret must be felt by every one who attempts the cure of rheumatism by any and every method hitherto suggested; but it is far from my intention to propose the *exclusive* spinal treatment. I have, it is true, in the progress of this highly interesting investigation, complicated the inquiry as little as possible, as must always be done in struggling to introduce a novel method of management, or to establish a new pathological view, founded on the evidence of superior practical success. That having been done in a manner which seems satisfactory to the profession, at least in this country, I have of late been much less exclusive in the treatment of the more obstinate forms of the disease, although I do not perceive on the whole that the success has been greater since the practice has been less simple.

From various very intelligent and respectable sources, cases have been forwarded to me, strikingly illustrative of the efficacy of the new practice, but as they are so much like those already given, it would scarcely add force to the conviction by their repetition. I have, in my own private practice, noted a number of facts bearing advanta-

geously on the point for which I contend; but as these cases always carry less weight when cited in support of a favourite theory or practice, I shall hold them in reserve for mere instruction, when, after the settlement of the doctrine and practice, I shall find leisure to execute my purpose of embodying in a work on the subject, all the facts which may have professional value.

It will better illustrate the whole subject to give a *condensed* view of the whole of the hospital cases reported *at length*, at my request by my zealous and inquiring friends, the resident physicians of the Institution.

Two cases in the surgical department reported by THOMAS STEWARTSON, M. D.

CASE IV.—Affecting upper extremities solely; pain, redness and swelling. On 13th May the attack began.

On the 15th, ten cups to upper part of spine.

16*th*. Four cups.

17*th*. Blister to same region 3 by 7 inches.

18*th*. Convalescent.

21*st*. Reported well.

CASE V. 21*st January*, 1832.—Attack of superior extremities removed by cups; translated to inferior ones; again relieved by cups and Dover's powder, and a cathartic. But complete cure was effected by the use of sulphur internally, and the patient reported well on the 2d of February.

Ten cases in the medical department reported by GEORGE W. NORRIS, M. D.

CASE VI. 15*th March*, 1831.—Bled, and frictions of soap liniment without relief. Cups to spine at both ends; partial relief.

17*th*. Cups again; more relief.

20*th*. Cups.

Reported on 26th as having been entirely free from pain since the 20th. Discharged.

CASE VII. *March* 30*th*.—Rheumatism of both knees, of eleven days duration. Ten cups applied at one time to lumbar spine entirely removed the disease, and after a few days he was discharged.

CASE VIII. *October* 13*th*, 1831.—Had been cupped eight times on the spine *below* the seat of disease, and once on the ribs where his pain chiefly lay. The latter alone gave him any relief. He also took, without benefit, blue mass and Dover's powder. On admittance to the hospital, he was put exclusively on the use of cups to the proper part of the spine. Three successive applications gradually relieved and finally cured him. Discharged on the 9th November.

Case IX. Of all the large joints, duration three weeks before admittance, which was on the 20th December, 1832. Cupped over the spine at both extremities, without relief.

21*st*. Renewed application, with improvement *in upper extremities* only.

22*d*. Repeat cups over lumbar region with the effect of total removal of pain. For a surgical affection, this patient was retained until 28th January, 1833, without return of rheumatism.

Case X. A similar case, admitted on 23d December, 1832, immediately relieved by cups, one application of which cured him. For an injury of the toes, he remained until the 15th January, without relapse, and was then discharged.

Case XI. A case of three weeks duration admitted on 30th December, 1831. Pain and tumefaction in right knee and shoulder, &c. Cups relieved the pain *in the shoulder*, and a second application of them entirely removed it *from that part*. At the third cupping, which was exclusively applied to the lower part of the spinal column, the whole disease left the patient. For mere *stiffness*, a liniment was ordered, and on the 4th February the man was discharged.

Case XII. John Morgan, a seaman, aged forty-eight, admitted December 30th, 1831, for a rheumatism of eight months duration, affecting chiefly his hips, knees, and elbows. At present only the lower extremities are affected. Two cuppings to the lumbar region entirely removed the pain and tumefaction. He remained in the hospital on account of a cough, until the 28th January. During the interval a slight attack of his rheumatism was again obviated by cups.

Case XIII. Case of nearly the same kind as the last, of six weeks duration, was received on the 30th January, 1832. As in other cases the relief from scarification was most speedily felt in the *upper* extremities.

The cups were again applied on the 4th, 6th, and 11th, when the pain, &c. entirely departed. On the 15th, he was discharged.

Case XIV. Chronic rheumatism, admitted on the 3d December, 1831. Affects *chiefly* the scalp and upper extremities, and is almost entirely confined to the left side of the frame. The only tumefaction is observed in the left leg. On the 6th, he was free from pain, but relapsed on the 7th, and again on the 29th. Because of an influenza, he was detained in the hospital until the 11th of February, and then discharged cured. In every relapse the cups gave full relief.

Case XV. William Cater, seaman, aged twenty-nine, admitted on the 16th February, 1832, for rheumatism, affecting the back of his neck, left shoulder, and elbow, but moving from place to place on

that extremity; aggravated at night; the elbow is tumefied and very tender to the touch; ten cups to the cervical spine; pain abates during the operation, and the patient sleeps better. On the 19th, repeat; again on 22d. Case reported well. Discharged on the 27th.

Twenty cases reported by Mifflin Wistar, M. D.

Case XVI. Joseph Pratt, admitted 4th October, 1832, and discharged on the 24th November, after several relapses. *Upper extremities* most easily relieved. The relapses were of the lower extremities.

Case XVII. Joseph L. Baker, admitted 29th November. On 3d December, free from pain. Reported well on the 11th. Same treatment.

Case XVIII. John Charles, December 1st, 1832, admitted. Affection of thighs, knees, and ankles. Two cuppings to lumbar spine gave relief. Reported on 4th free from pain.

Case XIX. John Wilson, 3d December admitted. Head and shoulders affected. Cups to nape of neck once. Reported on the 6th free from pain.

Case XX. Affection of shoulders, elbows, and knees. Admitted on 24th October, 1832. Applied eight cups to the *dorsal* spine with relief of *lower* extremities, but not of the upper. A repetition higher up gave relief to the arms. But in this case on the 15th November, for pain in the neck a blister was made, and because of a suspicion of syphilitic taint, Syr. sarsap. with minute doses of Corros. subl. were used, and on the 19th December he was reported well.

Case XXI. Admitted 7th December, 1832, for a rheumatism of all his extremities. Besides the cups, for the reasons which modified the treatment in Case V. Sarsap. and Corros. subl. were added to the local depletion. On the 15th December the case was reported as perfectly well. He was cupped for the last time on the 13th.

Case XXII. Admitted November 24th, 1832. Had been in the hospital from the 24th Sept. to the 13th Nov. and was sent home at her own request before she was well. The treatment had been that usually applied to such cases exclusive of the spinal applications.

On reädmission she complained of violent pain in her hands, knees, and feet, all of which were swelled, red and very tender. Eight cups were applied, four to each end of the spine.

25*th.* *Arms* much better; *legs* not benefited. Five cups to lower part of the spine, and one-fourth of a grain of sulph. morph. at bedtime.

27*th.* No better; reäpply cups.

28*th.* Cupping of yesterday gave relief.

December 1*st.*—Not so well. *Empl. epispast.* to lumbar region.

4*th.* Much better.

5*th.* The upper extremities are more painful to-day. *Empl. vesicat.* to nape of neck.

8*th.* Much better.

12*th.* As before.

13*th.* Increase of pain in inferior extremities. Ordered cups to lumbar spine.

14*th.* Relieved.

30*th.* As at last report.

January 10*th.*—Pain has returned within twenty-four hours, for which reäpplied cups.

21*st.* Supported her hand by a splint.

30*th.* Reports herself well.

Case XXIII. Admitted on the 23d of November, 1832. It is William White, whose attack two years before, cured by cupping, was reported in my first paper on rheumatism. Through the winter of 1831–2, he remained free from disease, but was attacked about the middle of November, 1832, with pain and swelling of his lower extremities. Before his entrance into the hospital, a translation took place to his left hand and wrist and right shoulder. As on the former occasion, cups to the spine gave him immediate and great relief, but frequent relapses caused us to apply blisters and pustulating ointment to the spine, raw cotton dipped in laudanum to the limbs, and splints to the joints. In addition, a nightly dose of Dover's powder was found necessary to allay pain and procure sleep. After all these things had in a great measure failed to procure ease, cups were again resorted to, and were at length the final cause of cure, according to the report of the 16th of February, 1833, at which time the history of the case before me closes.

Case XXIV. John Cave, sailor, aged fifty-two, was admitted on the 28th of December, 1832, for a painful affection extending from the hip to the ankle of the left leg, causing pain and stiffness of its joints. The case has existed for ten weeks. Ordered eight cups to lower end of spine.

29*th.* As yesterday; apply cups again.

30*th.* Rather easier; apply cups again.

31*st.* Some relief, but as there is still great pain, cups were to-day applied *in the course of the pain down the leg.*

January 3*d.*—Has been *much easier* since the 31st, but is to-day in more pain. Ordered *cups again to the limb.*

4*th.* Improved.

8*th.* As before.

11*th.* Not so well; applied cups to *lumbar region.*

12*th.* He is *much better.* He felt great relief immediately after the removal of the cups.

14*th.* As on the 12th.

15*th.* His limb is very painful to-day; eight cups to lumbar region.

16*th.* Again *greatly relieved.*

20*th.* Support his limb by a splint.

February 2*d.*—Continues free from pain.

13*th.* Remove splints; walks with great facility.

22*d.* Continues well.

Case XXV. Admitted on the 2d of January, 1833, and reported well on the 22d; was cupped five times, bled once, and took ℥j. sulph. magnes.

Case XXVI. Admitted January 15th, and reported well on the 19th. Had been afflicted *for a month* before admission. Was cupped on the spine once, and took a dose of calomel, followed by Epsom salts.

Case XXVII. Admitted on the 10th of February, and reported free from pain on the 13th. Acute rheumatism of three weeks duration. Cups relieved his *upper*, but failed to impress his *lower* extremities—a repetition of them to lumbar region afforded ease. For a severe pleuritic pain in his side, ℥xvi. of blood were taken from the arm, and a dose of sal. Epsom was given.

Case XXVIII. G. W. Peirce, admitted on the 13th of February, and reported well on the 15th, had violent pain and tumefaction of the left leg of two weeks duration. He was cupped on the lumbar spine once, and suffered no other treatment.

Case XXIX. Mathew Donnelly, admitted 13th of February. Had been sick for five months. On admission both ankles were inflamed. Four times cupped on lumbar region, and was free from pain on the 27th. On 2d March relapsed; cupped again on spine with relief. On 4th blistered *his ankles.** Reported free from pain on 10th.

Case XXX. Admitted on the 2d of February. P. M'Coy has inflammation of all the large joints indicated by pain, redness and tumefaction. The attack has lasted for six days. Apply ten cups to the spine.

3*d.* The cupping has afforded great relief. Directed a pectoral mixture for his cough.

* I have sometimes received cases which had resisted peripheral treatment; but which could not be entirely cured by the central method. After alleviation by the latter, the secondary seat is often appealed to with the happiest effect.

5th. Complains of pain in the left wrist, shoulder and hip; reäpply cups; and because of a dry and encrusted tongue, order mass. hydrarg. grs. iij. to be followed by a dose of magnesia.

6th. Rather better; order neutral mixture.

7th. Continues better; cups to the spine.

10th. Continues to improve.

26th. Has no pain.

Case XXXI. J. Parsonage, aged seventeen, admitted on the 23d of February, 1833, for a rheumatic affection of two months duration, is afflicted with pain and tumefaction of the left knee. Apply eight cups to lumbar spine.

24th. No better; reäpply cups.

25th. Easier, but is still in much pain. Cups to be again applied to the spine.

27th. Free from pain.

March 1st.—Complains of pain in both shoulders; apply eight cups between them over spine.

2d. Experienced the usual relief from cupping.

8th. Continues well.

Case XXXII. Wm. Woodruff, aged twenty-seven, was admitted on the 7th of January, for rheumatism of the shoulders and knees, which are swelled and painful. Was cupped on the spine; cupped again on the 8th; blistered over the cervical spine on the 10th; and on the 16th, for returning pain, again cupped. By these means relief of the upper extremities was experienced, but it was found necessary to cup for the lower pain on the 18th. Reported *much* easier on the 19th. On the 30th the report states, that "owing to the unfavourable weather he has had several returns of pain, which were relieved by cups; but as there existed some reasons to suppose a syphilitic origin, compound syr. sarsap. was ordered."

February 12th.—Complains of pain in the shoulders. Apply six cups to corresponding part of the spine.

13th. Has again experienced relief.

26th. Free from pain.

Case XXXIII. John Robinson was admitted on the 16th of January, 1833, for violent pain in his right shoulder, caused by a sprain in attempting to lift a heavy weight some weeks before. In this case, evidently disconnected with the central nervous masses, cups were repeatedly applied to the cervical and upper part of the dorsal spine with very little if any benefit, although great pains were taken at the same time to keep the joint at rest. After convincing ourselves of the futility of the practice, we used the scarificator and cups over the

joint itself with immediate advantage, and in a few days the patient could use his arm without inconvenience.

Case XXXIV. Solomon Summers, seaman, aged twenty-seven, was admitted on the 25th of February, 1833, for rheumatism of the shoulders, elbows, and knees; all of which were tumefied and very painful. The attack had endured for two months. Eight cups to lumbar spine.

26*th.* The same as yesterday. Ten cups to upper part of spine.

27*th.* His *upper* extremities are much easier.

28*th.* As his knees are very painful, cup the lower part of spine.

March 1*st.*—Feels much better since last cupping.

3*d.* Complains of some pain in both shoulders. Cups to upper part of spine.

4*th.* Much better.

8*th.* Continues well.

Case XXXV.—R. M'Donald, a female, admitted on the 16th of February, for a painful affection of the *head*, to which she has been subject at intervals for several years. This attack was brought on apparently by exposure to cold, and is accompanied by violent pain in the *lower jaw.* Apply six cups to the *head.*

17*th.* Greatly relieved; repeat cups to the head.

19*th.* Continues better.

March 6*th.*—The treatment has been continued according to the degree of pain, and the patient may be considered well.

In reviewing the thirty-five cases now presented to the readers of the Journal, several general truths seem worthy of particular notice. Among these not the least important is the bearing on the question of *pathological seat.* The first case, in conjunction with the cases of rheumatism produced by carious spine, reported in my first paper on this subject, leaves no doubt in my mind that a *condition of parts* exactly the same as in rheumatism, may and does exist as an effect of irritation of the great nervous masses at the centre. It remains to be proved by the opponents of this system, by equally conclusive facts, that a genuine translateable rheumatism is ever found to be independent of such a cause, or that the disease *properly called rheumatism* is ever a primary affection of the limbs or joints. The extraordinary facility with which most of the recited cases were cured by exclusive spinal treatment, goes far to establish concurrently the same truth. For when a true inflammation of a joint has a purely local character, as in Case XXXIII. the spinal treatment is altogether useless, while the more direct application of the same means meets with prompt

success. If inflammation alone of the tissues ordinarily attacked by rheumatism constituted that disease, inflammation from a sprain or blow affecting the same parts should have the same translateable character, which is so characteristic of true rheumatic inflammation, and should also be capable of passing not only to similar parts, but to the viscera, as not unfrequently happens in rheumatic cases.

The great value of the opiate practice in rheumatism, is no small auxiliary to the arguments in favour of the central origin, because it is only by lessening nervous irritation that such a medicine can prove useful. It follows as a corollary that the best possible practice in these cases consists in spinal depletion and counter-stimulation combined with the judicious use of opiates. That such a practice has not been more generally followed in the public duty at the hospital, arose from a desire to obtain the more conclusive evidence of the truth afforded by the avoidance of obscuring complication. That being now attained, the practitioner will no longer feel justified in leaving out of his system of cure, any one of the useful auxiliaries called for by the varying contingencies of his cases.

Another general fact is that rheumatism attacks those parts only whose nerves come out at or near to the part of the *medulla spinalis* which is in an irritated state. This was the fact in the carious cases, and in the case of Dr. PARKER, of Elkton. Although all the nerves in descending along the spinal canal, must have been subjected to diseased influence, only those which *took their departure* from that part of the spine were influential in producing rheumatism, which consequently appeared at *their* sentient extremity exclusively.* The same point is sustained strongly by the effect of the remedial measures, which were scarcely ever of any use when applied to remote parts of the spine, and were generally promptly beneficial, when directed to the origin of the nerves of the part inflamed.

As far as we could ascertain, the remedial effect of the spinal treatment was most potent when applied exactly over the place of exit from the spine, of the nerves which supplied the inflamed part. It is also remarkable that the affection of the upper extremities was almost always the most easily remedied. This may be ascribed with probability to the greater effect of the cups on those parts of the spine which lie least imbedded in cellular tissue and muscular fibre.

In conclusion, I may be permitted to advert to the close connexion

* In my letter to Dr. Evans, March 14th, 1832, making inquiry respecting Dr. Parker's case, I find the following:—"Was there, (I should suppose not,) any rheumatic pain of the legs during the present illness?" Answer—"Has not had any rheumatism in the legs since the injury."

between common rheumatism and certain diseases of mucous and fibrous tissues in the eyes, nose, mouth, alimentary canal, bladder and urethra. In many cases diarrhœa and dysentery are found to alternate with rheumatism of the extremities, and particularly of the lower limbs. Wherever such cases happen, they are found to yield more readily to spinal treatment than to any other mode of cure, thus affording another proof of the spinal origin of such cases.

On the whole it seems to me that the evidence for the pathology contended for, is much more conclusive in the present instance, than that on which the profession is accustomed to rest for much of its accredited science. As far as I can comprehend the objectors, their main difficulty lies in abandoning an unquestioned opinion, founded on prescriptive learning, and the more obvious phenomena of the disease. But even they will find it impossible to explain away the facts brought forward in favour of the new doctrine, unless they can show that in original inflammations of the periphery, the most judicious treatment consists in applications to the centre, a position fully overthrown by every abortive attempt to remedy sprains or bruises of the limbs by medicaments to the spine. Another objection lies in the absence of tenderness of such parts of the spine as are here presumed to be under irritation. If, however, that irritation transmits pain to a remote part, we ought not to expect to find it tender on pressure, but we ought to look for aggravation of the peripheral disease, an event actually produced in Dr. Parker's case. In a very few persons the spine was found tender on pressure, but these were patients who belonged to a debilitated class, in whom certain parts of the spine are almost always found too susceptible, whether they have or have not rheumatism, hysteria, or any fibrous or any uterine irritation. That tenderness so much insisted on, is but proof of an irritated condition of the *spinal braces*, the effect of weakness too highly tasked, and is totally independent of disease of the *medulla spinalis.*

So far as this case has been discussed, the *facts* have been adduced solely on the side of the new doctrine, while its opponents have contented themselves with irrational and supposititious objections, according to a system which long since driven from other sciences, finds yet, I am sorry to say, a refuge in the temple of medical dogmatism. They admit the remarkable cures, the potent practice. They do not deny that rheumatism is produced by caries and injury of the spine, but as they do not see or feel the spinal irritation in the rest of the cases, the treatment, the relief, the victory over this obstinate malady, carry no argument to them, though sustained by analogies so striking and so profitable.

Tabular Abstract of Cases.

Name.	Date of admission.	Date of Cure.	Duration of treatment.	Remarks.
W. W. - - -	1st Sept.		1 day	
Eliz. Turner -	14th Sept.		4 days	
Geo. Steiner -	13th May	18th May	5 do.	
Chas. Wilson -	21st Jan.	9th Feb.	19 do.	Spinal treatment failed.
W. Barnard -	15th Mar.	20th Mar.	5 do.	
Chas. Schrœder	30th Mar.	1st Apr.	2 do.	
W. Bowes - -	1st Nov.	6th Nov.	5 do.	
Anthony Della	20th Dec.	25th Dec.	5 do.	
Christ. Rudolph	23d Dec.	25th Dec.	2 do.	
Daniel Wilson	30th Dec.	2d Jan.	3 do.	
John Morgan -	30th Dec.	2d Jan.	3 do.	
Charles Slater	3d Jan.	11th Jan.	8 do.	
Andrew Franklin	3d Dec.	11th Feb.	70 do.	Four relapses.
W. Carter - -	16th Feb.	22d Feb.	6 do.	
Joseph Pratt -	4th Oct.	6th Oct.	2 do.	Several other relapses, discharged on 24th Nov. Total, 59 days.
The same -	15th Oct.	17th Oct.	2 do.	
Jos. L. Baker -	29th Nov.	3d Dec.	4 do.	
John Charles -	1st Dec.	4th Dec.	3 do.	
John Wilson -	3d Dec.	4th Dec.	1 day	
J. M. Grezinger	24th Oct.	19th Dec.	56 days	Salivated.
James Carpenter	7th Dec.	15th Dec.	8 do.	
Margaret Poston	24th Nov.	30th Jan.	67 do.	Blisters and splints.
W. White - -	23d Nov.	27th Nov.	4 do.	Total, 74 days; other treatment used.
Relapsed -	1st Dec.	26th Dec.	26 do.	
Relapsed -	2d Jan.	16th Feb.	34 do.	
John Cave - -	28th Dec.	2d Feb.	36 do.	Splints.
John Henry -	2d Jan.	22d Jan.	20 do.	
W. Goldsmith	15th Jan.	19th Jan.	4 do.	
Capt. P. - -	10th Feb.	13th Feb.	3 do.	
G. W. Peirce -	13th Feb.	15th Feb.	2 do.	
M. Donnelly -	13th Feb.	27th Feb.	14 do.	Total, 22 days.
Relapsed -	2d Mar.	10th Mar.	8 do.	
P. M'Coy - -	2d Feb.	10th Feb.	8 do.	
J. Parsonage -	25d Feb.	2d Mar.	7 do.	
W. Woodruff -	7th Jan.	26th Feb.	50 do.	
S. Summers -	25th Feb.	3d Mar.	7 do.	
R. M'Donald -	16th Feb.	6th Mar.	18 do.	

Twenty-two of these cases were cured within eight days; and of the remaining ten cases, four were instances of frequent relapses through imprudent exposure during convalescence. At least two were supposed to complain for the purpose of remaining in the hospital, an event which not unfrequently exhibits hospital practice in a disadvantageous light. Only four cases therefore required any other than spinal treatment.

Although cupping is the most potent mode of spinal treatment, I have, in private practice, not unfrequently found that a good rubefacient, such as a sinapism, produced great relief, and sometimes effected a cure. At the very commencement of an attack, it is often adequate to the entire removal of the pain, and consequent prevention of greater severity of symptoms.

ART. VII. *Case of Intussusception.* By SAMUEL JACKSON, M. D. Assistant to the Professor of the Institutes and Practice of Medicine and Clinical Practice in the University of Pennsylvania.

IN February last, Mr. F. called on me for advice, and gave me the following statement of his case. In June, 1832, he had an attack of bilious colic, as the disease was called by his physician. He was treated by depletion and active purgatives. The violent symptoms were overcome, and he was enabled to resume his accustomed employment, which was that of a clerk in a counting-house, though he still continued to suffer. In about a month from the first he experienced a second attack, and these had been repeated at intervals of two and three weeks, the last of which was a few days past. In the attacks he suffered violent pain in the abdomen, with constipation of the bowels. Flatulent eructations were almost constant, and his digestion was impaired. He was generally constipated, but the bowels had been latterly kept open by the daily use of purgative pills, prescribed by his former physician. By the same advice animal food had formed the principal part of his diet.

During this time he had constantly felt in the lower and right side of the abdomen, an uneasy and often painful sensation, with a feeling of fulness and weight, which was relieved by pressing on and raising that portion with his hands.

Being doubtful of the nature of the affection, I advised merely a farinaceous and laxative diet, restricting the quantity of animal food, with the use of frequent demulcent enemata, and cupping over the lumbar and iliac regions.

Age of the patient fifty-five; robust frame; sanguine temperament.

March 4th.—I was summoned to attend him in an attack which had commenced the preceding day. His bowels had been until the present time daily evacuated. He had been in violent pain during the night, the seat of which was the right lumbar, iliac and hypochondriac regions. Pressure excited pain. The stomach was irritable; vomiting frequent; a watery, greenish fluid discharged from the stomach; pulse nearly natural; no heat of skin. Cups were applied; the camphorated effervescing draught prescribed to allay the gastric irritability, and enemata of flaxseed mucilage thrown into the bowels.

5 *P. M.* Stomach tranquil; vomiting has ceased; pain continues; sinapism over the seat of pain; Ol. ricini. ℥j. every hour; whey for drink.

10 *P. M.* Cessation of pain; has hiccough; no fever; no evacuation from bowels. Calomel, gr. iv.; opium, gr. i. and repeat.

5th. Had a restless night; a copious alvine evacuation procured by an injection. Continue the oil, with whey for drink.

5 *P. M.* No pain; bowels not moved since morning; has occasionally hiccough; a sinapism to epigastrium; infusion of senna and solution of Rochelle salts, ℥ss. every hour; injections.

11 *P. M.* Calomel, gr. iv.; opium, gr. i.

6th. The last night was more comfortable; stomach remains composed; hiccough has ceased; has pain, but less intense. Calomel, gr. i. every hour; omit other remedies. In evening opiate.

7th. Rested well; pulse continues natural; has had no passage; stomach tranquil; continues calomel with Infus. sennæ.; and Solut. sal. Rochelle every two hours.

Evening. Return of pain; bowels not moved; opiate at bed-time.

8th. Night was restless and disturbed from pain; no vomiting, but fluid regurgitations from stomach; constipation continues; same treatment.

9th. Pain during the night; slight fever; pulse has considerable tension; no motion; v. s. ℥viij.; fifty leeches to right iliac and hypochondriac regions.

4 *P. M.* Fever reduced; pulse softened; blood sizy, but coagulum flabby.

10 *P. M.* Has had an alvine evacuation of considerable consistency and deep brown colour, produced by an injection of flaxseed mucilage. Calomel, gr. ii., s. morphiæ, gr. $\frac{1}{8}$, every four hours.

10th. Night tranquil; no evacuation; no vomiting; ol. terebinth, gtt. v. every hour, with a Seidlitz powder in the intermediate time.

Evening. In same state; ol. croton, gtt. iv.; mucil. g. Arab. ℥ii.; ℥i. every two hours.

11th. Disturbed night; renewal of pain; no evacuation; borborygmi from commotion excited in the bowels by croton oil. It racks him, as he expressed himself, with pain. Fever existed, attended with excessive thirst; stomach rejects frequently a thin fluid. Small pieces of ice to be kept constantly in the mouth; fifty leeches to right iliac region; all medicine to be omitted.

5 *P. M.* Ice is very grateful, and has calmed the stomach; leech bites continue to bleed; pulse reduced. Calomel gr. viii.; acetat. morphiæ, gr. i.

10 *P. M.* Entirely free of pain; leech bites still continue to bleed; pulse feeble; hæmorrhage arrested by touching the bites with nitrate of silver.

12th. Has passed a tranquil, comfortable night; entire absence of

pain; abdomen is more flaccid and supple; no motion from the bowels; stomach is quiet; borborygmi indicating movement of the intestines; chicken water for diet.

5 P. M. Remains in same state; pain in right hypochondriac; sinapism applied, and opiate pill repeated.

At 11 o'clock, P. M. had profuse discharge of extremely fetid black blood from the bowels; filled a chamber in a short time; great exhaustion ensued. The evacuations became involuntary; stimulants were unavailing in supporting the sinking forces, and he expired before morning, without a struggle.

The autopsy, at which I was present, was made twelve hours after death, by my friend and former pupil, Dr. Mutter, who devotes, with a commendable zeal, much of his time to investigations in pathological anatomy. The following is derived from report:—

Exterior.—Moderate degree of embonpoint; tympanitic distention of the abdomen to some extent; ulceration upon the right iliac region produced by a blister; leech marks upon the same; no peculiar rigidity of the muscles observed.

Abdomen.—Upon opening the abdomen, the peritoneum, both parietal and intestinal, exhibited traces of inflammation; varying, however, in their intensity in different situations. Along the attachment of the mesentery, they were most conspicuous. The vesical portion of the peritoneum presented a most singular appearance. Without exhibiting any of the usual evidences of the previous existence of inflammatory action, we found it studded with patches of a darkish-green colour, resembling very much the spots observed upon some species of the pippin apple, or those upon the belly of the common toad.

Omentum.—The omentum majus was spread out in situ, and exhibited traces of inflammation, particularly towards its lower edge.

Stomach.—The stomach was considerably dilated, and contained about half a pint of a thin grayish fluid. The mucous membrane of a grayish colour, good consistence every where, not much wrinkled, and not mamillated. It presented an appearance by no means of frequent occurrence, though nevertheless occasionally met with. The whole surface, but more particularly its pyloric portion, was studded with little depressions or pits, resembling somewhat those of the cutis, though not quite so large, which gave to it a reticulated or lace-like appearance. This appearance is not the effect of ulceration of the gastric mucous glands. Ruysch has observed analogous appearances in the mucous membrane of the stomach; and Santorini

describes them as occurring in the duodenum. The stomach presented no traces of the previous existence of inflammation, nor were the gastric symptoms during life such as to create uneasiness, or to be other than those proceeding from its sympathies.

Small Intestine.—The small intestine was considerably distended by gas. It contained in its upper and middle thirds, a moderate quantity of a thin fluid, resembling that found in the stomach, whilst the lower third was filled with a whitish-clayey matter of the consistence of soft mush, and very fœtid. The mucous membrane throughout was of pretty good consistence, normal in its thickness, and a little coloured by its contents. The glands of PEYER were but very slightly developed. In the last foot or two of the ileum, but especially about the seat of the ileo-cœcal valve, the isolated follicles were considerably enlarged. We now come to the seat of the disease. Upon examining the right iliac region we were struck with the singular appearance presented by those portions of the ileum and colon contained in it. At the first glance it might readily have been supposed that a complete *knot* had been tied, by some means or other, in the intestine at this point. The caput coli very much distended, evidently contained within its cavity, some firm or fleshy substance, which body also projected for some inches into the colon. The appendicula vermiformis was no where to be found. The lower portion of the ileum was of its usual size, and exhibited traces of inflammation along its mesenteric attachment. Immediately over the usual seat of the ileo-cœcal valve, the intestine exhibited a wrinkled or puckered appearance, and was very firm. (Fig. 1. exhibits very well its appearance at this stage of the dissection.) Upon cutting into the colon to separate the diseased mass from its connexions, there issued forth a large quantity of *blood*, partly fluid, partly coagulated, mingled with the secretions of the intestine, and exhaling a very fetid odour.

On laying open the colon, a firm cylindrical body, seven or eight inches in length, and one and a half in circumference, rough on its surface from numerous small ulcerations, and of a deep mulberry-red colour, was seen projecting into the cœcum, through the ileo-cœcal valve. At its inferior extremity was a hard tubercle, about the size of a nutmeg, perfectly solid, resembling the tumour, to which it was adhering by a small pedicle. Immediately below this, and partly concealed by it, was an opening, four or five lines in diameter. This tumour was the inverted ileum, passing through the ileo-cœcal valve; the mucous membrane exterior, and the opening below was the orifice of its

canal, communicating with the intestine above the valve. Through this passage, the fecal matter, when not too consistent or large, was enabled to pass from the small into the large intestine.

The mucous coat of the inverted ileum being divided, a large fibrous mass, of a dull-white colour, presented itself, lying between, and adhering to the peritoneal coats of the invaginated intestine. This mass was organized coagulable lymph, secreted from the serous membrane of the intestine, after its passage into the cœcum, and gave to the invaginated intestine its appearance of a firm, dense tumour.

The colon was considerably distended with gas, and contained a large quantity of blood. The mucous coat exhibited a dark purple-red, produced partly by being steeped in the effused blood, and in part proceeding from inflammation, for numerous arborizations and punctuated redness were found to exist when it was washed. The follicles were also enlarged, and some few ulcerated. The strips yielded by the mucous membrane were but from one to two lines in length, the membrane being generally softened.

The liver, spleen, kidney, and pancreas, exhibited no morbid phenomena. The bladder was contracted. Of the mesenteric glands one or two were enlarged, the remainder natural.

The ganglia of the sympathetic were of normal appearance.

The thoracic viscera were natural, excepting some ancient adhesions of the right pleura.

Observations.—The original attack of bilious colic, as it was called, must be considered as the epoch when the invagination of the ileum is to be dated. From that period, the patient had suffered uneasiness or pain in the right iliac region, with repeated relapses. The large fibrous mass formed between the peritoneal coats of the introverted intestine, with its advanced state of organization, must have been the work of time, and could not have been produced in the last attack. In this case is then presented the fact of an invagination of the intestine existing for several months.

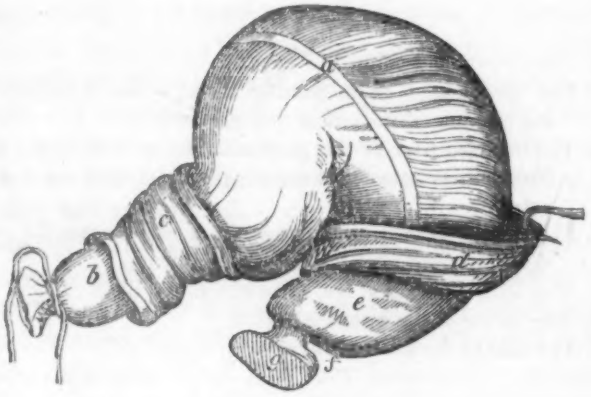
The disposition or arrangement of the parts concerned in the disease, exhibits the manner in which a natural cure is possible, and probably is occasionally effected. Adhesive inflammation of the serous coats would glue the ileum and cœcum together at the point of invagination, while the invaginated portion sloughing away, would leave a free, unembarrassed passage from the small into the large intestine. A process of this kind appeared to have been set up in the present case, but hæmorrhage having ensued from the mucous coat of the invaginated ileum, exhausted the forces of the patient. The

hæmorrhage was undoubtedly the immediate cause of death. An hour before it commenced, the patient was remarkably composed, and the symptoms presented nothing indicative of an immediate danger.

I may here remark, that with one exception, all the cases I have met with, called bilious colic, iliac passion, volvulus, &c., have acute inflammation, involving the ileo-cœcal valve, the consequent tumefaction, augmented sensibility, and irritability of which, have been the real causes of the constipation, presenting a mechanical obstruction to the passage of the flatus and fecal matters from the small into the large intestines. In the treatment, the reduction of this inflammation and irritability is the chief, if not exclusive indication. When that is accomplished, the evacuations will take place with facility.

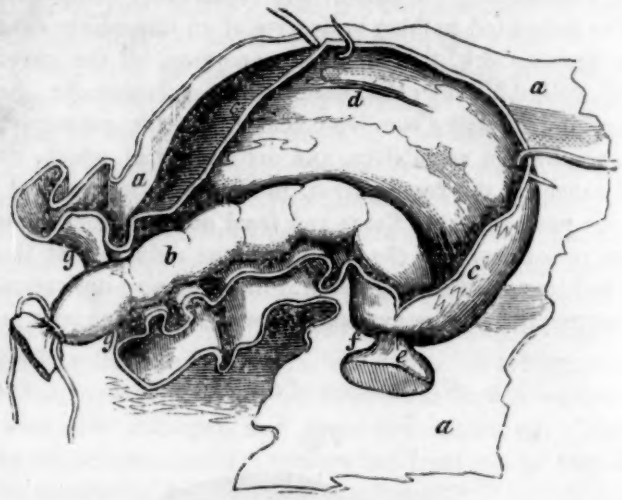
Explanation of the Figures.

Fig. 1.



a. The cœcum as it appeared before being laid open.
b. The ileum entering the cœcum through the ileo-cœcal valve.
c. The wrinkled or puckered appearance of the gut around the seat of the ileo-cœcal valve.
d. The colon turned back, showing the extremity of the invaginated ileum.
e. The lower portion of the invaginated ileum; the mucous membrane exterior.
f. The orifice of the canal of the ileum.
g. A tubercle formed by a swelling and hardening of the mucous membrane, closing the orifice of the intestine like a valve.

Fig. 2.



a. a. a. The cœcum and colon laid open.
b. The invaginated ileum passing through the ileo-cœcal valve into the cœcum. The serous coat presents.
c. The inverted part of the protruded ileum laid open, showing the fibrous mass between the serous coats. The mucous membrane exterior.
d. The fibrous mass lying between the serous coats of the entering and reflected portion of the invaginated ileum.
e. The solid tubercle at the extremity of the ileum.
f. The orifice of the intestinal canal.
g. g. The seat of the ileo-cœcal valve.

ART. VIII. *On the Apocynum androsæmifolium.* By WILLIAM ZOLLICKOFFER, M. D., F. C. P., late Lecturer on Botany, Materia Medica, and Toxicology, &c. &c.

THE genus Apocynum belongs to the class Pentandria, and to the order Digynia. It ranges in the natural order of *Contortæ* of LINNÆUS, and *Apocyneæ* of JUSSIEU.

This genus is characterized as follows:—*Folliculi 2, longi, lineares. Semina papposa. Corolla campanulata. Anthera mediocum stigmati cohærentes.*

Species androsæmifolium—*Foliis ovatis, glabris, cymis terminalibus, lateralibusque; tubo corrolla calycem superante.* The root of

this plant is perennial; "stem herbaceous, erect, two to three feet high. Leaves opposite, ovate or oval, lanceolate, mucronate, and somewhat glaucous underneath. Corolla monopetalous, five cleft, white tinged with red. Nectary, five oval glands surrounding the germ, purple, viscid. Anthers scarcely as long as the corolla."

In the first edition of my Materia Medica of the United States, which emanated from the press in the year 1819, this indigenous vegetable production had a place. Subsequent to that period, some remarks, as coming from me upon its remedial virtues, were published in the "American Medical Recorder." Since the publication of my work, Professor BIGELOW introduced the Androsæmifolium in his invaluable "American Medical Botany." Within the few years past, I have had very ample opportunities of establishing its therapeutic operation to my own satisfaction, in consociation with certain facts in connexion with the substances which are incompatible with its isolated medicinal display of action. It is unnecessary for me here to advance arguments in the support of the opinion of medical incompatibility, or of that display of operation that not unfrequently occurs between substances when brought into immediate contact, by which their virtues are rendered inert, or so modified, as to change their action, and cause them to assume characters, entirely opposite to their original or uncombined effects. This part of medical learning is sufficiently well established.

According to WALTER and MICHAUX, this species of Apocynum is an indigenous plant, growing naturally from Canada to Virginia. In Maryland it is to be seen almost every where. Here it is recognised by the common and local appellations of silk-weed, milk-weed, snakes-milk, dogs-bane, &c. It is very incorrectly supposed by the peasantry to possess noxious properties. It is a lactescent plant, emitting upon the slightest incision into its cortical part a profuse milky exudation, which, when exposed to atmospheric action, assumes the consistence of caoutchouc, and burns with considerable vividness, with flame analogous to that which results from the combustion of alcohol.

Chemical composition.—Resin, caoutchouc, and mucus, are the chemical constituents entering into the composition of the Androsæmifolium.

Solubility.—Its active properties are soluble in water and alcohol. Macerated for seven days 3240 grains of the contused bark in alcohol, from which I procured, after carefully passing it through bibulous paper, and evaporating it over a water bath, 178 grains of alcoholic extract, and 28 grains of watery extract. Inversely from the

same quantity I obtained 160 of watery, and 104 grains of alcoholic extract.

Incompatible substances.—It should not be given in combination with opium, when emesis is intended to be produced by its administration, not only because it frustrates its emetic action, but in consequence of it so modifying its operation as to cause it to display its effects upon the surface. Capsicum anuum completely controuls its emetic operation. In these instances I have taken a sufficient quantity to excite vomiting, in combination with five grains of the powdered Capsicum anuum, but without the least effect whatever.

Vegeto-anatomical examination.—Twenty-five hundred and thirty-six grains of the recent root afforded upon a separation of the different parts entering into its structural organization, 1726 grains of cortex or bark, and 810 grains of ligneous or woody part. Its activity I have found resides exclusively in the bark, which composes rather more than two-thirds of the root.

Medical virtues.—It is tonic, emetic, and diaphoretic. In doses of from ten to twenty grains it is admirably calculated to improve the tone of the digestive apparatus, and through this medium produce a corresponding impression upon the general system. Forty grain doses excites emesis very promptly, without inducing scarcely any previous nausea. It is therefore a mild and effectual emetic, and deservedly entitled to a conspicuous place in our Pharmacopœias and apothecary shops. It is diaphoretic when given in combination with opium, *only* in the dose of forty grains with one of opium; exhibited at intervals of three or four hours.

ART. IX. *Case of Shoulder and Arm Presentation in which Death took place from a Detachment of the Placenta.* By JOHN M. B. HARDEN, M. D. of Liberty County, Georgia.

THE following, to me very interesting and instructive case, I have thought might prove alike interesting to the medical public, as it may direct the attention of the younger members of the profession, who, like myself, may be called "in an hour when they think not of it," to a similar responsibility, to one of the most serious and often complicated species of labour that can possibly be encountered by the accoucheur, where there is at the same time any promise of a successful termination to both mother and child. It will here be per-

ceived that a case dangerous and difficult in itself, may be complicated with other and no less serious accidents, which are alone to be successfully met by the discerning eye and prompt skill of an attentive and prudent practitioner; and although from its termination I may not be enabled to lay claim to the distinction in this case, still I feel that if I may, from an exposition of it, only "point an indication" to others, it is my duty to do so, regardless of all consequences to myself as an individual.

On the 9th of January, 1832, I was suddenly called up at midnight to visit in consultation with Dr. H. then of this place, a negro woman, between twenty-three and twenty-five years of age, in labour with a second or third child. She had been in labour about sixteen or eighteen hours. I was informed by Dr. H. that it was a case of arm and shoulder presentation, and that having made some ineffectual efforts to deliver the child, he was not disposed to proceed further without assistance. Upon my arrival I found it to be the first presentation, according to Dr. Dewees, in such cases—the right arm being down, with the back anteriorly, and the palm posteriorly and greatly swollen. The waters had come away early in the labour; the os uteri was well dilated and dilatable; the fundus firmly contracted on the body of the child; the pains very severe and frequent, indeed almost continual. Believing the only way to proceed was to turn and deliver, if this was practicable, I suggested the propriety of attempting it. This the doctor undertook, but soon abandoned it to me. I immediately introduced my hand into the uterus, which I found in the condition above described, and endeavoured by cautiously insinuating it between the child and the parietes of the uterus, to reach the feet, but so violent and constant were the contractions, that I found it utterly impracticable, and soon desisted. The alternative was to wait a "spontaneous evolution," or by blood-letting to overcome the contractions of the uterus, so as to enable us to effect the turning—a plan so highly recommended by Dr. Dewees in such cases. The latter was determined upon. The arm was immediately bound up and a vein opened, but the blood not flowing freely from the orifice, it produced only an approach to syncope. I seized this opportunity to turn, and to my gratification, I found the contractions not so violent, and expected to accomplish it without difficulty, when to my great surprise the action of the uterus *suddenly ceased*, and I felt the placenta distinctly floating in fluid. I immediately remarked what had happened, and proceeded without delay to seize the feet and bring them down, hoping that the contractions would soon take place again. This I now accomplished with great ease, and after

delivering the whole body, waited a short time to watch the result. There was no return of pain. The woman soon became dangerously exhausted, the pulse gone, the extremities cold, and indeed before we were aware of the urgency of the case, it was too late to bring back the ebbing tide of life.

Remarks.—1. I did not make an autopsic examination. I regret this the more, as it would have thrown more light on the immediate cause of death in this case. But we may safely conclude, I think, from the circumstances of the case, that it resulted altogether from the *loss* of blood. I did suppose at one time that there may have existed a rupture of the uterus, but the absence of many of the prominent symptoms attending on rupture, such as the passage of the child into the cavity of the abdomen, the intense and sudden pain felt on the occurrence of such an accident, renders it highly certain that such was not the fact. We conclude, therefore, that concealed accidental hæmorrhage from detachment of the placenta was the immediate and only cause of death. Furthermore, neither the contractions of the uterus, nor the force used in my second attempt to turn, was sufficient to have occasioned a rupture, so that if it did exist, it must have occurred antecedently to the bleeding from the arm, when the contractions were sufficient to have occasioned the escape of the child from the uterus, which did not take place.

2. The cause of the detachment of the placenta is not at all obvious, since there was evidently no placental presentation to render it unavoidable, nor did I feel the placenta with my hand until after its separation, so as to have induced me to believe that it arose from manual interference. It took place too before the situation of the child was altered, for it was not until after the complete relaxation of the uterus, induced by the atony into which it was thrown by the direct loss of blood, that I succeeded in reaching the feet and bringing them down. It must have resulted then, either from the violent efforts of the uterus previously, or from the atony superinduced by excessive action and loss of blood from the arm; the former of which hypothesis I consider most likely. I am the more inclined to this opinion from the following remarks of Dr. Denman:—"Sometimes," says he, "the whole, or a large part of the placenta will be separated *suddenly*, without any accident or symptom that could give warning or apprehension that such an event was to be dreaded. The separation of the placenta may then happen previously to the commencement, and it is less surprising that it should sometimes occur during any period or stage of labour."—*Francis' Denman*, 1821, *p.* 486.

3. "Spontaneous evolution" in this case seemed to offer a forlorn hope, for, as was said above, the waters had long come away, and

the fundus of the uterus "was firmly contracted on the body of the child." And indeed so "tightly wedged was the shoulder in the inferior strait," that although the os uteri was fully dilated, so as to offer scarcely any resistance to the introduction of the hand, yet I am fully persuaded that even had I succeeded in my first attempt to reach the feet, there would have been great difficulty and danger in the attempt to turn.

4. From the above case, we are fully persuaded of the utter impracticability of turning the child in this stage of labour, and in such a presentation, so long as the fundus continues its contractions, even although the os tincæ may be *fully dilated*, or at least the force necessary to be used in such an attempt, would greatly endanger a rupture of the uterus. To overcome these contractions, there is no plan which promises so much as blood-letting, ad deliquium animi, and to induce this state with as little loss of blood as possible to the system, we would adopt in a *similar case*, and recommend that the woman be placed in a standing or sitting posture, and the blood drawn from a *large orifice*, and continued until there is at least an *approach to syncope.**

5. There was no contraction after the turning, although the *whole body* of the child was delivered. This arose, no doubt, from the general and local exhaustion into which her system and uterus were thrown by the general and local bleedings. Had cold applications and frictions over the uterus, together with gentle stimulants, been used in time, she may have possibly survived, but the hæmorrhage being concealed, exhaustion and death came on most unexpectedly and so suddenly as to prevent a timely resort to these remedies, which may have prevented the unfortunate result.

Liberty County, Georgia, May 14th, 1833.

ART. X. *Sketch of a Remarkable Case of Splenitis, supposed during Life to be Scirrhous Ovarium.* By WILLIAM MARKLEY LEE, M. D. of Kerslaid, S. C.

STELLA, an African wench, æt. 40, and the mother of four children, was led to consider herself pregnant in April, 1831, in consequence of the interruption of the catamenia, and the other indications of conception: she continued to follow her usual avocation as a field-hand until the close of that year, when the gradually increasing

* This plan of treatment was many years ago recommended by Dr. Dewees, and has been repeatedly practised by him with success.—ED.

size of the abdomen, the œdematous condition of the lower extremities, and more especially the absence of all internal motion, induced her master to consider it a dropsical affection. In January, 1832, I located myself at Packsville, where he resided, and was requested to visit her. I endeavoured to draw from herself a history of the preceding symptoms, but from her remarkable obtuseness of intellect, could obtain no satisfactory information. Her only complaint was of the weight of the abdomen pressing upon the ossa pubis while standing, and of dyspnœa in the recumbent posture; her pulse was natural. In conformity with her master's views of the pathology of the disease, he had treated it by occasional doses of jalap and sup. tart. potass, which relieved the anasarca of the ankles, but produced no diminution of the abdominal tumour. On examination, I found the abdomen fully as large as at the expiration of the usual term of pregnancy; no fluctuation whatever was perceptible, but about three inches above the left os pubis, and the same from the linea alba was a circumscribed tumour of an eliptical form placed transversely, and not adherent to the abdominal parietes. Its situation, the simultaneous interruption of the menstrual discharge, and the absence of fluctuation in the tumour, induced me to pronounce it scirrhus of the left ovarium, for pregnancy it could not be, as the dimensions of the tumour were apparently not above three by four inches. The œdema of the ankles I ascribed to the pressure of the tumour upon the vena cava ascendens, or the lymphatics; still some symptoms were to me inexplicable; as the tumour itself did not appear to exceed the size of an ostrich egg, and I could not attribute the general magnitude of the belly to enlarged mesenteric glands, for she was neither emaciated nor subject to lienteric diarrhœa; on the contrary, her appetite was good, even to voracity; her digestion was healthy, but her bowels rather tardy. Led by my view of its pathology, I directed for the relief of the anasarca of the legs, warm alkaline pediluvia, and a horizontal posture of the lower extremities while sitting; for the latter, as she would not consent to a surgical operation, offering the only ostensible method of relief, I could do nothing, and was compelled to leave the case to nature. The foot baths effected all I desired, but the abdomen continued to increase in magnitude until the beginning of April, when I was sent for in haste, as she was thought to be dying, but before I could reach her, she had expired.

Autopsy twelve hours after death—The abdominal viscera presented a healthy aspect, but the stomach was thrown into an oblique position; the slaty colour of the tumour in the left iliac region, forcibly reminded me of the spleen, and on passing my hand under a fold of

the omentum, which partly covered it, I was surprised to find it to be in reality the spleen, increasing in diameter as it approached the diaphragm; when removed its dimensions were twenty-seven inches longitudinal circumference, sixteen inches and three-quarters transverse circumference, weight five pounds and a half.

I have often seen enlargements of the spleen extending beyond the linea alba, and of an oblate form; they were always the relics of chronic intermittents; as far as I can learn, Stella's case was truly a pathological anomaly; it was not preceded by intermittent fever, and the uniform increase of the abdomen, the form and location of the tumour, and the simultaneous interruption of the catamenia, led me, and I think would have led any other physician, to pronounce it ovarian disease.*

I have in vain endeavoured to recollect the details of any analogous cases, met with in the course of my reading during a residence of eight years, (student and physician,) in Charleston; I have sought in vain for such in my medical library, and have described the case to many of my professional brethren, but none were acquainted with any similar affections. This woman was a dirt-eater, and so filthy in her habits, that her natural complexion could not be known, her skin being covered with soot in consequence of her constantly hanging over the fire.

My treatment would be alterative doses of mercury at night, aided by frictions of tinct. of iodine, or cataplasms of stramonium, as recommended by Dr. Cunningham, of Arkansas, (N. A. Med. and Surg. Journ. Vol. V.) Tonics, so beneficial in ordinary splenitis,† or more properly, congestion, rather than inflammation, would be here probably useless.

* Soon after I had taken charge of the above case, I was requested to visit a young white woman, at a considerable distance from Packsville, who for four years had exhibited the appearance of pregnancy; her parents were so fully persuaded that she was bewitched, that argument and ridicule were equally unavailing; I found her in precisely a similar situation as Stella, except that from her excessive corpulence, she was confined to her bed, and could not even turn over without assistance: six or eight eminent physicians had visited her at different intervals of time, and had unanimously pronounced it ovarian disease.

† Since writing the above, I have succeeded in curing several cases of splenitis by Fowler's mineral solution.

ART. XI. *On the Pathology and Therapeutics of Cholera Maligna.* By HUGH L. HODGE, M. D., one of the Physicians of the Almshouse Infirmary, and late Physician to the City Cholera Hospital, No. 4.

"A PUBLICATION is not rendered improper or needless, because works of a similar nature have preceded it. Little would ever issue from the press if this principle were admitted." Thus writes an eminent and modest author, whose works have proved of great utility. So much however has been written on epidemic cholera, that the subject seems to be exhausted, and the public mind to be almost satiated. The fact, nevertheless, must be acknowledged, that although this disease has been investigated by the most eminent physicians in Asia, Europe, and America, and although it has been treated by every conceivable variety of empyrical effort, yet the pathology of cholera, and of course the principles of treatment, are not established.

This being the case, publications should be multiplied. Every individual who, by observation or reflexion, has attained a result, even on one point of pathology or practice, satisfactory to himself, should cast such result before the public to assist, if possible, in elucidating the pathology and therapeutics of an epidemic, which in its desolating course from east to west—from the Ganges to the Mississippi—has set at nought, not only the dogmas of the schools, but also much that was venerated and trusted in medical science. The charge of vanity, or of the affectation of superiority, should not therefore be urged against any new recorder of facts or opinions. The minds of men differ as much as their physiognomies, and every man who is capable of independent reflexion will stamp the character of his own mind on his writings, and may thus facilitate the onward path of science.

Under the influence of these opinions, I would publish, even on so trite a subject as cholera maligna, the result of personal observations on this epidemic. The chief object will be, by analyzing the incipient and confirmed symptoms of the disease, to determine the true pathology of cholera maligna, so denominated, and thence to deduce scientific principles for its management. "Experientia docet"—experience must be the test of all pathological doctrines. To say that the pathology is true, but the practice necessarily resulting is injurious, is absurd—as such admission would destroy the very object of pathology, and paralyze the efforts of every medical philosopher: for what advantage can accrue should the nature of a disease be firmly esta-

blished by the laborious investigation of the anatomical arrangements and physiological state and functions of the part affected—of the symptoms which characterize its morbid state, and the changes evinced by the knife of the dissector, if, after all, the therapeutical precepts deduced from it cannot be conveyed to the bed-side? On the contrary, if the principles resulting from such scientific investigations will stand the test of experience, the advantages resulting to the profession and to the public, are immense. Not only will a suitable class of remedies be designated, but the appropriate time and circumstances under which each agent should be employed will appear, while the circumscribed boundaries of mere experimental knowledge will be almost indefinitely enlarged. One principle is worth a thousand facts. A principle is indeed nothing more than a general fact, which, resulting itself from individual facts, is the prolific parent of an innumerable progeny.

My opportunities for observing cholera have been as varied as that of most practitioners of this city. In the spring of 1819, I had charge of several cases of the disease in Calcutta, India, among the native Hindoos and the American sailors, being the vestiges of the desolating epidemic of 1817–18. On the breaking out of the epidemic in this city, I prescribed for the first cases at the Alms-house Infirmary with every facility for post mortem examinations, which were always made. Subsequently I took charge of the City Cholera Hospital, No. 4, and was during the whole epidemic constantly and actively engaged in private practice. From these sources, the varieties of the disease, arising from location, natural temperaments, morbid predispositions, depraved habits, and complications with other disorders, have been often observed, and thus sufficient data been afforded for analyzing the symptoms of cholera, and separating those which are peculiar, from those which it has in common with other complaints. In giving this analysis and its results, no claim is made for strict originality, but the hope is entertained, that truth will, in some respects, be elicited, and the cause of humanity benefited. Believing that this disease essentially resembles many with which the profession are familiar, and that it can be managed in a rational scientific manner, with as much prospect of success as any analogous complaint of a malignant aspect, no just reason can be discovered for abandoning the principles of medicine, or for confiding in the wild and contradictory assertions of empiricism.

As the object of this essay is to indicate principles for the treatment of cholera, deduced from its *pathology;* and as its pathology

must be established by a careful examination of its characteristic symptoms, and of its effects as exhibited by post mortem investigations, a detail of facts becomes necessary as a basis of subsequent reasoning. But certain general propositions must be previously stated respecting disease in general, that the following observations may be at least understood, even if they should not be approved or adopted.

It may be proper to disclaim all belief in *ontology*, as it has been termed by the Broussais school, that is, in the idea that disease is an *entity*—a being—a something added to the system. This is a notion which, I doubt, few physicians of respectability have ever entertained, although it has of late years been the subject of severe sarcasm. On the contrary, disease is virtually disorder, an alteration of the natural state or actions of the tissues or organs of the economy. A knowledge, therefore, of the natural state or actions of parts, in other words, of physiology, is requisite for understanding their morbid condition. Physiology demands a minute acquaintance with the structure of the body. Anatomy and physiology are therefore the true foundation upon which pathology can alone rest. Unfortunately, these sciences, especially physiology, are still imperfect, and hence there are various and honest differences as to subjects of fundamental importance.

That the expressions hereafter employed may be understood in the precise sense intended, I would remark, that, agreeably to Bichat's arrangement, the body is regarded as composed of organs, and these of tissues. The nervous, vascular, and absorbent tissues may be called general tissues, as entering into the composition of all organized portions of the body—the nervous being of two kinds, ganglionic and cerebro-spinal, each distinct and peculiar, but intimately connected by communicating branches. It is believed, that there is but one vital property, viz. *irritability*, or the capability of receiving impressions, of being acted on; and that the evidences or manifestations of this property vary in different tissues—some presenting the phenomena of contraction, as the muscles; others of expansion, as the iris, nipple, &c.; and others, of sensation, as the nerves; hence we speak of contractility, expansibility, and sensibility, which are merely irritability modified by tissue.

Every tissue maintains its own peculiar vital susceptibilities in all its various combinations in the different organs; a remark peculiarly applicable to the general tissues, necessary for organization, as nerves, blood-vessels, and absorbents. Hence irritations of these tissues present analogous phenomena in all the organs; when severe they often involve the whole economy, forming what are termed

general or constitutional diseases, as contradistinguished from similar affections, involving but a portion, often a minute portion of a tissue; thus we observe *general*, as well as local, nervous or vascular diseases.

There is great truth and value in the division of life, as it regards its phenomena, (for of life we know nothing,) into *organic* and *animal*, as has been happily conceived by Bichat. Organic life, as it is summarily termed, having respect to the changes which occur alike in all animated beings, vegetables and animals, such as circulation, respiration, nutrition, secretion, and absorption; while animal life, or the life of relation, is peculiar to animals, and distinguishes them from vegetables: its phenomena are those of sensation, perception, motion, volition, &c. The phenomena of animal life depend solely on the cerebro-spinal system of nerves; those of organic life on the vascular system, (perhaps on the ganglionic system of nerves;) hence every part of the body, not excepting the brain and nerves, is the subject of organic life and its peculiar diseases, while the brain and its dependencies alone manifest the disorders of animal life.

The functions of the two lives are, from the anatomical arrangements of the nerves and blood-vessels, necessarily most intimately connected—as any disturbance of the circulation in the brain must affect the medullary mass; and nervous excitations or depressions have more or less influence over the vascular system, as the experience of every individual can testify. Hence these general systems—the nervous and vascular tissues—the representatives of organic and animal life—are usually simultaneously and similarly deranged. In many cases, however, they are observed in very opposite conditions; great depression of organic life, with a natural or excited condition of animal life, and sometimes dulness, stupor even of the brain when the general and local circulation is apparently undisturbed. This singular fact, evincing the partial independence of the brain and nerves on the vascular system occurs, there is reason to believe, very frequently, but has been exceedingly overlooked by pathologists. It no doubt will aid exceedingly in reconciling many apparent contradictions in the reports of experienced physicians respecting the treatment of diseases. The circumstances under which these opposite conditions of the nervous and vascular apparatuses occur, have not been accurately pointed out, nor their causes detailed, but they are frequently seen in all the variety of neurotic diseases, are almost essential to the existence of mania a potu, and, I have no doubt, form one of the leading peculiarities of cholera maligna, attention to which is

of the utmost importance, and the neglect of which has been the cause of much of the disappointment and failure so generally experienced in its management, as will hereafter be exemplified.

The tissues thus endowed with irritability can be acted on by external or internal causes, which may be arranged under two general divisions—*irritants* and *sedatives*, or those agents which excite, and those which depress vital phenomena. Irritants acting on the irritability of a tissue cause irritation; sedatives cause sedation; the former being of course a state of excitation, the latter a state of depression; and hence directly opposed to each other.

Irritation and sedation should always, when possible, be distinguished from two other conditions with which they are almost universally confounded; viz. strength and weakness.* Strength and weakness have reference to an increase or diminution of power; irritation and sedation to similar changes of excitement or action. Irritation often exists where there is great debility, and sedation is continually noticed where the strength is very great. An individual greatly debilitated by hæmorrhage may have a high fever; a strong man may be torpid from exposure to cold.

Another remark is of importance, that states of irritation or sedation, owing to peculiar laws of the economy, are often secondary, not directly resulting from the original cause; thus febrile irritation does sometimes succeed great abstinence or profuse hæmorrhages; reäction after these depressing causes. On the contrary, great torpor, *i. e.* extreme sedation, is often induced by excessive excitement; thus gangrene may follow inflammation; prostration may be the consequence of fever. Analogous to this, is immediate depression or sedation from an overwhelming irritant, as the prostration which results from extensive burns, from gun-shot wounds, or other severe contusions.

Irritation or sedation of the blood-vessels necessarily involves changes in the circulation; of themselves important and at the same time aggravating existing phenomena.

"*Ubi irritatio ibi afluxus*" is now an axiom in medicine, and always true if irritation be restricted to organic life, but if extended to the organs of animal life will very frequently prove deceptive. Irritation increases not only the flow of blood to a part, but also its transit and exit from the same part. There is every evidence of increased circulation derived from the bright arterial colour, the heat, the in-

* Vide American Journal of Medical Sciences, Vol. X. p. 93, for the author's views on this subject.

creased secretions, the enlargement of the supplying vessels, and also of the veins carrying away the blood.*

On the contrary, sedation is marked by decided evidence of a diminished circulation; the part becomes cold, blue, or livid; the vasa afferentia and vasa efferentia are diminished in size and activity, and there is a diminution or suppression of the natural secretions. As a certain degree of tension and firmness exist where there is irritation and a rapid circulation, so sedation and a diminished circulation render a part soft, doughy, inelastic. Should the sedation occur suddenly, some blood may be arrested in the smaller vessels, at least for a time, increasing the lividity of the surface; but this is comparatively rare externally. Internally this collection of blood is common; the veins especially become turgid with dark grumous blood, sometimes to an enormous degree, oppressing the already torpid organs, and often preventing their natural efforts to reäct. These are *passive congestions* of blood, in which the fluid is arrested *in* a part, and not actively determined *to* a part, as in the case of irritations; for in these last, the blood would be bright, well arterialized; the pulse active; the organic actions increased, &c. These are *active congestions.* The consequences of active congestions are well known, but those of passive congestion have been less noticed, and of course less understood. We usually observe serous or bloody effusions, (not secretions,) venous hæmorrhages or complete stagnation of the blood, and consequent death. Examples are numerous in the influence of severe cold on the internal viscera; in gangrene; in the cold stage of intermittents; in malignant forms of fever, indeed in malignant diseases generally; in many convulsive affections, &c. In all cases there is diminution of vital heat, a livid condition of the parts, diminution of force and frequency of pulse, and a partial or complete stagnation of the circulating fluid.

There is also a remarkable contrast in the condition of the blood in active and passive congestions, (a very positive proof of their essential opposition.) Active determination of fluids to a part is almost universally accompanied by a florid, highly arterialized, or vitalized state of the blood, which, when effused, coagulates firmly; the coagulum retaining the red globules, and expressing an abundant and pure serum. In well-marked cases, the phenomena characterizing inflammatory blood are noticed, such as the firm coagulum, its cupped form, adapted to the shape of the vessel, the buffy coat, &c. Passive con-

* Vide North American Medical and Surgical Journal, Vol. VI. p. 23 and 34.

gestions present us a dark-livid "venous" blood. In some cases, this blood, when effused, forms a soft coagulum of large size; the coagulum retaining much of the serum, but often suffering the red globules to escape, so as to give the whole separated serum a reddish tinge. It sometimes happens that the coagulation hardly occurs; the blood is excessively black; little separation occurs between the constituent parts; the serous or thinner portions being livid or black, from retaining the colouring matter of the blood, while this colouring matter itself no longer consists of *globules*, for these seem to be broken down or destroyed. This constitutes the "dissolved blood" of authors.

One important remark should be subjoined, which explains why the state of sedation and congestion has been so frequently denied to exist, and all its phenomena referred to irritation, viz.—the complication of active and passive congestion in the same case. It not unfrequently happens that when a passive congestion is induced, irritants are subsequently applied to portions of a tissue so circumstanced; or even prior local irritations may exist, by which blood is determined actively to the same tissue, greatly enhancing the dangers of the case, and demanding the most energetic measures for the safety of the patient. Examples we shall have occasion to give, but would now mention the cold stage of fever complicated with abdominal inflammations; passive congestion of the lungs complicated with bronchitis, or pneumonia, as often seen in asthma; convulsions with passive congestion, aggravated by the administration of stimuli, &c. *Post mortem* examinations will evince the alterations from inflammation, while the indications of passive congestion have often disappeared; hence the morbid anatomists seem justified in referring the phenomena, during life, to active, rather than passive congestion, without reflecting on the severity of the preceding disease, and the comparatively trifling evidences of inflammation.

The above views may seem trite to many, and novel to others; by some they would no doubt be disputed, but on appeal to clinical observation, I think they will be found substantially correct, and also in accordance with the common experience of the profession. Should this be the case, there will be a solid foundation for the division of diseases into two great classes—those caused by irritants and those by sedatives—diseases of *irritation* and those of *sedation*. Each of these may be complicated with each other, be modified by the innumerable variety of causes, (for no two agents produce precisely the same effects,) by temperaments, constitutions, habits, strength, age,

sex, climate, locations, and various other general agents, and especially by the organs and tissues primarily or secondarily affected. Divisions and subdivisions may hence be greatly multiplied; nevertheless, a careful philosophical analysis will, I believe, lead us to the above simplification of diseased actions.

Diseases of irritation (of organic life) involve active determination of fluids to a part, or induce general vascular excitement; hence active hæmorrhages, acute dropsies, inflammations, febrile affections, &c.

Diseases of *sedation* are accompanied by passive collections of blood, (the retention of fluids in a part;) hence passive hæmorrhages and effusions, the various congestive forms of disease, and all the varieties of malignant diseases. But, as already intimated, we seldom in practice meet with simple forms of disease; diseases of irritation and sedation are continually complicated, one with the other, and modified by various circumstances. Still the essential predominance of one class of actions can be almost always detected, affording a foundation for appropriate treatment, to be regulated according to the peculiarities of the case.

The treatment of diseases of irritation is by sedative measures—those which diminish action, whether by a direct or indirect influence on the part concerned. They need not be particularized, as they are recognised by every one under the title of antiphlogistic remedies.

The treatment of diseases of sedation is by stimuli, local or general. These, by exciting the organic actions, not only counteract the causes of depression, but also the disposition to passive congestion with its unpleasant consequences. Should stimuli alone not be adequate for this purpose, much science and judgment will be demanded in endeavouring, by more direct methods, to unload the congested vessels that reäction may ensue. Hence in moderate cases, little difficulty is experienced, but in the severer forms of sedative and congestive diseases, the most judicious and experienced practitioner, regulated by the best medical principles, cannot always command success; nevertheless he will often triumph under the most untoward circumstances, as changes of structure and disorganization seldom occur in diseases of sedation unless complicated with irritation in particular tissues. The details of this practice will be given when speaking of the management of cholera maligna; a disease which, I shall endeavour to prove, is essentially one of sedation of organic life, with irritation of the cerebro-spinal system of nerves, (animal life.)

In the preceding observations having stated, without intending at present to defend the pathological principles involved in the follow-

ing investigation, a statement of the phenomena of cholera maligna, as observed by the author, will be made as the foundation of future reasoning.

Respecting the *causes* of cholera maligna, I have few observations to make. They may, for practical purposes, be divided into general and local; the former embracing the epidemic influences which are essential to its prevalence, the latter the peculiar circumstances which facilitate its development in certain places and in particular individuals.

Of the essential or epidemic cause we know very little respecting its source, nature, or modus operandi. From its history, which has been so frequently detailed, we may assert that it does not exist as an ingredient or component part of the atmosphere, but as a separate and independent agent. Its influences, however they may have been modified, have not been controlled by the heats of Hindostan, or the rigors of a Russian winter, nor successfully opposed by the seasons of the year—by winds, however regular or powerful, by forests, mountains, deserts, or oceans. They have defied, not only these natural barriers to the progress of pestilence, but every restraint suggested by science or presented by experience. The independence of this agent on the atmosphere has been exhibited, not only by the history of its progress from country to country, but by its apparent fickleness in every district it has invaded, not affecting all portions at once, or in regular succession, as the atmospherical variations of temperature, but like the thunder-storm or the whirlwind, pouring its destructive influences on devoted spots, while all around may be tranquil and safe. When prevalent in a given place, few escape its influence, but experience demonstrates, that *local* causes greatly favour its appearance and its ravages. These local or particular causes have reference to external circumstances, and also to the peculiar temperaments, constitutions, habits, &c. of individuals. They need not now be particularized, as they are noticed by most of the writers on cholera maligna, and are the foundation of all the sanatary measures for cities and individuals, which have been so successfully employed in most districts of our country. "Avoid exciting causes" has been the universal and important admonition under the supposition that all were predisposed by the general cause which gave character to the subsequent affection.

Although thus ignorant of the origin of the epidemic, and of the laws regulating its progress, we may determine to which of the two great classes of causes, irritants or sedatives, it belongs, by examining its effects on the animal system. To accomplish this object most

effectually, the influence of the epidemic must be detected as early as possible, and be traced through the different stages of the complaint to recovery or death; thus, light may be thrown not only on the character of the cause, but on the nature or pathology of cholera.

The influence of the epidemic cause on the animal system may be advantageously considered under five general heads; the 1st, including the precursory symptoms; the 2d, the symptoms of the first or active stage; 3d, those of the second, or collapsed stage; 4th, those of reäction, constituting the third stage; and 5th, the appearances on dissection.

1st. *The precursory symptoms* vary exceedingly in different individuals, whose temperaments, constitutions, and habits, do not correspond. In general, they are those of oppression, with some nervous disturbance. The individual is easily fatigued; he complains of a general unpleasant feeling, (malaise,) with sensations of fulness about the head, chest, but especially of the abdomen, which seems to be enlarged. A little exertion may induce a palpitation of the heart, or oppression of breathing; there is often giddiness, dulness of intellectual faculties; appetite is impaired, and food taken oppresses and disturbs the viscera. Bowels are torpid; frequently a diarrhœa or dysentery supervene; the discharges, although often containing feculent matter, are of a light colour, sometimes pale-yellow, grayish, or even whitish at this early period. The surface of the body is paler, but of a darker hue than natural, as also the lips and tongue; there is less urine secreted; there is a coolness and clamminess of the skin, and some slight sensations of rigors, at least these are easily excited by a draught of air, and by placing the feet on a cold surface. The pulse is almost always slow, sometimes soft and full, at other times contracted and slightly tense, forming the oppressed pulse of authors. Should blood be drawn, it will be observed darker than on ordinary occasions; the coagulum will be large, soft, and the apparent proportion of serum small. The patient has often irregular pains in the back and limbs, but complains especially at night of occasional cramps in the extremities, particularly in the calves of the legs; the parts remaining tender on pressure. He is easily agitated or alarmed.

These precursory symptoms, known by the term "cholerine," vary in duration from a few hours to several days; often they are never observed; the decided symptoms of cholera appearing at once—no dysentery or diarrhœa even preceding the attack. Hundreds, indeed thousands have been affected by them without any further evidence of disease, and it perhaps may be safely asserted, that ordinary prudence with judicious directions will usually prevent the

development of the complaint. But this is not always exercised, hence we often have—

2d. The symptoms of the *first stage of cholera.*—The attack of cholera is usually sudden, and varies, as to what is apparently the first symptom, in different individuals. Perhaps in most cases, there is a profuse discharge of a grayish or whitish fluid from the rectum; the patient is much distressed without positive pain, and has often nausea and sometimes vomiting. The first evacuations per rectum, are often mingled with feculent matter, but still of a light colour; afterwards they become thinner, having the appearance usually of oat-meal gruel, consisting of a serous fluid filled with a flocculent matter of some slight consistence. Afterwards the discharge becomes more watery, and seems, in many instances, to consist of pure serum. The vomiting is first of the contents of the stomach, should any ingesta be present: afterwards of a light-coloured fluid, with few flocculi, more like serum, or the drink which may be given.

In other cases, the patient complains almost exclusively of the nausea and vomiting, discharging every thing taken into the stomach almost immediately, while the bowels are but slightly and sometimes not at all disturbed.

Again, I have seen cases in which there was no vomiting or purging, the patient complaining perhaps of some nausea and feelings of oppression and malaise, but would hardly regard himself as seriously indisposed, were he not suffering from cramps in the muscles of voluntary motion, particularly of the legs, to him the first and only indication of disease.

Purging of light-coloured fluids, vomiting or cramps appear therefore to be the primary symptoms, and are so indeed to the patient, and to the inexperienced physician; but on attentive examination, the whole physiognomy of the patient, and all his vital actions as far as can be judged, will be found more or less deranged prior to the occurrence of purging, vomiting or even spasms. There is often a wild, anxious, timid expression of the countenance; the features are contracted; the eyes sunken; the secretion of tears diminished; the colour of the skin is dark, sometimes bronze-like, with a purplish appearance of the lips, tongue, mouth and fauces; the skin and mucous membrane of the mouth are cool; the extremities often cold; the hands and feet contracted; the nails purplish, with an inelastic condition of the surface generally, which with the mouth and tongue remains moist. The mind of the patient is not materially affected; there is at this stage usually anxiety and restlessness; sometimes giddiness, or sense of fulness or enlargement of the head; the respiration is

slow, marked by sighing, and a feeling of oppression referred to the lower portion of the chest, especially about the heart.

The breath of the patient is usually remarked as being less warm than natural.

The pulse I have found in this stage to be *oppressed*, sometimes it is weak and tremulous when the vital functions are still active, but usually the pulse is small, contracted, and slow; often with considerable tension, analogous to the apoplectic pulse of authors, but having seldom the same degree of force. As the symptoms advance, the pulse becomes softer, smaller and weaker, prior to the actual occurrence of the second stage.

In the abdomen there are perhaps more unpleasant sensations, referred chiefly to the epigastric region. These sensations are those of stricture, of weight, of fulness, rendering the patient very restless, and aggravating the disposition to full inhalation. In most cases, there is no complaint of abdominal pain, or of any sensation of heat or burning; and when interrogated, such feelings are seldom acknowledged, unless there is a collection of undigested food, or of acrid matters. There is seldom tension of the abdomen, even when there is much sense of fulness; but this cavity is soft and can be even forcibly pressed and moved without disturbing the patient. Very generally he will affirm that he has no pain in any of the cavities of the body.

The vomiting and purging are usually without much effort or straining; the quantity of fluid evacuated is sometimes enormous; again, and even in bad cases, very trifling, and, as above intimated, in some cases, there is no evacuation by the mouth or rectum. No evidence of the secretion of bile is afforded; the partial appearance occurring during the precursory diarrhœa now entirely vanishes. So also the urine is diminished in quantity, and sometimes is suppressed, the bladder being empty. No tears are secreted. Profuse evacuations often occur from the surface of the body, especially if much heat be applied; the skin becoming more cold and livid, and the capillary circulation slower.

Should the blood be examined, it will be found darker than during the preceding or precursory state, the coagulum softer, and the serum less in quantity, and more red.

These symptoms characterize the condition of the organic life of the patient during this first stage of cholera; the organs of *animal life* are also disturbed. The nervous irritability of the patient is more marked. There is more alarm, and the senses are often exceedingly acute; noises are sometimes agonizing; the sense of thirst is always

great and peculiar, often excessive; patients affirm that prior to this disease, they hardly know what was the sensation of thirst—and this too, when the tongue is moist and comparatively cold. So also the *sensibility of the skin* is excessive; patients complain of a degree of heat and of stimulation, which healthy individuals would bear without inconvenience, when the circulation in the skin is almost or altogether stagnant, when this tissue is contracted, purple, and actually colder than after death. Great complaints are almost universally made of hot applications and of sinapisms, and other rubefacients.

But this disorder of the nervous system is more especially manifested by the neuralgic pains in different portions of the body, and by violent tetanic spasms in the voluntary muscles. These spasms are most frequent in the gastrocnemii muscles; they affect the other muscles of the legs and feet, also those of the thighs, arms, back, and abdomen; occasionally those of the chest and throat, very seldom of the face. The pain is excessive—sometimes recurring at long intervals, often every few seconds, and sometimes there is apparently little intermission—the patient being agonized under a universal tetanic contraction, exciting the most heart-rending exclamations of suffering, increasing the cold perspirations, and prostrating still more the vital powers. They constitute the chief suffering of patients—indeed, the only pain to which they are ordinarily subjected.

Their occurrence is very irregular; in some cases they constitute almost the only urgent symptom, there being no vomiting or purging; while in others of a severe grade, they are very trifling, or are altogether absent. As the disease advances they often disappear, and cannot therefore be regarded as among the essential symptoms of the disease, although they evince a morbid state of the nerves.

3d. Should relief not be afforded, *the second stage, or that of collapse*, as it is significantly termed, ensues; in virulent cases it occurs almost instantaneously, there being no perceptible forming stage. The coldness of the skin now increases—becoming greater than that of surrounding objects; little warmth is perceptible even on the epigastric; the cutaneous discharge is augmented; the lividity is usually more intense, so that the whole aspect of the patient is altered as in cases of asphyxia, or as if he had been dusted with charcoal; the skin is contracted—on the hands and feet it is corrugated or shrivelled; the lips, tongue and mouth generally are also livid and cold, the thermometer in the mouth frequently not rising above 88° or 89°, and the parts *feeling* still colder to the examiner; the features are pinched and contracted; eyes sunken, with an anxious

expression, the conjunctiva being pale or livid; the respiration is slow; the breath is colder than natural; the sense of oppression increases, often becomes very great, and united with præcordial distress, it produces the most unremitting and exhausting jactitation, depriving the patient of all the solace and refreshment which sleep might afford. The pulse now is at best small, tremulous, vermicular, but in most instances, disappears entirely in the smaller arteries for hours before death ensues, and sometimes in the protracted cases even for days. In the larger vessels, and in the heart itself, the pulsations are exceedingly feeble. The vomiting of serous fluids continues, and is sometimes very constant, without much nausea or retching; the purging generally diminishes, and often disappears, but sometimes a serous fluid continues to flow, pleno rivo, per rectum, without effort or consciousness on the part of the patient. No urine or bile is excreted, and the secretion of tears is suppressed.

Such is the condition of the organic life during this sinking or collapsed stage of the disease. The organs of animal life being the subject of organic life must suffer in a similar manner, but their partial independence is most wonderfully manifested. The patient's intellectual powers—his memory—perception—and even judgment, are preserved in a remarkable degree, considering the depression of his organic actions. His mind and feelings are however more quiet than during the first stage, and he seldom manifests much interest in his own safety or the welfare of others. This listlessness increases, and in some few cases partial stupor precedes death, even when there is no decided symptoms of congested brain.

The peculiar excitability of the nerves of sense and motion continues, and is in some respects often augmented, notwithstanding the increasing weakness of the circulation, the greater coldness and lividity of the surface. The sensation of thirst is agonizing—usually absorbing all the desires and interests of patients; the susceptibility of the cutaneous surface is so great, that all rubefacients, and even moderate heat, are intolerable; the patient often will not bear the covering of a blanket, and will petition with moaning accents for the removal of every means of irritation, when the pulse is no longer discernible, and life nearly extinct.

The spasms, as already intimated, often disappear, but sometimes they increase in severity, and continue almost to the last instant of life, the termination of which they seem to accelerate. Indeed, after death—that is, of the organic life, this irritability of the nerves is often manifested by the movements of the fingers, toes, and even of

the limbs, continuing from a few minutes to two or three hours, and in all cases, the muscles universally become unusually contracted and rigid.

It would be foreign to the object of this paper to dwell upon the almost innumerable modifications of these symptoms which result from the various exciting causes, the temperaments, habits, constitutions, and diseases of the individuals, and the circumstances in which they are placed, or the treatment to which they have been subjected. It will be sufficient to observe, that these variations are more numerous in the first than in the second stage of the disease—among the precursory symptoms than among those which precede dissolution. In the closing scene there is a melancholy uniformity in the manifestations of this most terrible malady; the cold and livid, the moist and shrivelled surface—the shrunken features—the husky voice—the constant jactitation—the pulseless arteries—the oppressed respiration—too surely and uniformly indicate approaching dissolution, although the mind, as if determined to manifest its independence on organized matter, preserves to the last much of its wonted energies, and occasionally exhibits traits of its pristine activity.

4th. It however does not always happen, especially when medical assistance is afforded, that death terminates the second or collapsed stage of cholera maligna. In some cases *reäction* ensues; the pulse becomes perceptible at the wrist: soon a little fulness and distinctness are recognised; there is a greater warmth of the body first, then of the limbs; the effusion from the skin and bowels ceases; the lividity of the skin is less intense, and there is less jactitation: soon the warmth of the surface is decided; the corrugation of the hands and feet disappears; the colour is more natural, and all the phenomena of life are gradually reïnstated. Among these should be noticed as very favourable the return of the urinary and biliary excretions; the bile being manifested by vomiting or purging of this fluid, usually mingled with mucous matters. The tongue becomes clean and pale; the appetite is restored; the thirst disappears, and convalescence is fully and rapidly established. This is the most favourable, but unfortunately, not the usual form of reäction, for in many cases, the patient's danger continues exceedingly great, so that a very large number perish during apparent convalescence. The symptoms now manifested are so various, that it would be tedious and useless to enter into a detail, but for establishing suitable practical indications, those which I have witnessed may be arranged under three general divisions.

In many, during the reäction of the organic life, as above described, high excitement of the cerebro-spinal system is manifested. The patient becomes really maniacal, being impetuous in his actions; refusing all advice; wandering about his room or the house, and quarrelling with his attendants by day and night, until he is exhausted by his efforts; all relief from sleep being denied him. He suffers as patients maniacal from drink. Such cases are often observed in the intemperate, and those of a nervous temperament.

Another form in which reäction occurs in a dangerous manner, is where some organs are oppressed, and even overwhelmed by the severity of the organic actions. Such cases were common; symptoms of passive and active congestion being combined; the pulse often remaining weak; the extremities even cold; the bowels torpid, but the surface being generally warm, especially over the affected organ, and the natural colour being partially or completely restored. The brain suffered most frequently, but occasionally the lungs, stomach, bowels, or liver were the seats of this reäction and congestion, by which their functions were impaired, the reëstablishment of healthy action in other organs prevented, and thus the life of the patient jeopardized or destroyed.

A third variety of morbid reäction was observed, accompanied with febrile symptoms; hot, dry skin; frequent, but weak pulse; dry tongue, where no organ suffered so intensely as in the former cases from congestion, but where reäction was nevertheless inordinate, with symptoms of irritation in one or more of the viscera. The patients suffered as in typhoid fever.

5th. The last source of facts, from which the pathology of cholera maligna must be deduced, arises from the condition of the solids and fluids, observed chiefly on *post mortem examinations.*

Much has been said and written on the condition of the fluids in this disease, and statements have frequently been made directly opposed to each other. Much of this discrepancy has arisen from a want of careful observation, and also from the imperfection of animal chemistry. The latest and best observations have been made by M. L. R. Lecanu, of Paris, who was rewarded by a gold medal of the Académie de Medicine, July 12th, 1831, and by W. B. O'Shaughnessy, M. D. who made an official report to the Central Body of Health of London on the 7th of January, 1832.

1st. The blood is always altered in appearance, being both in the arteries and veins much darker than natural; it is less fluid; the coagulum is soft, and large, and black; often there is no proper coagulum, and no separation of the serum; the blood resembling

"tar" in colour and consistence; the red globules, O'Shaughnessy affirms, remain unaltered, they are often diffused in the serum, not being retained by the imperfect coagulum. In the subjoined table from O'Shaughnessy, will be seen the changes effected in the serum of the blood from cholera patients, as far as ascertained by the most careful analysis. The specific gravity of the serum of healthy blood is estimated at an average at 1.28; that of cholera blood at 1.45. The proportion of serum to crassamentum in health being as 57 to 43; that of cholera blood as 43 to 57.

"The crassamentum was found normal in the proportion of its ingredients, so that the addition of a certain quantity of water would have restored it to its usual density, proportions, &c. For this reason I have not included the crassamentum in the tabular statement of the analysis."*

"The dense, clotted, tarry mixture consists of dense, though fluid albumen, fibrine in a semi-coagulated state, colouring matter and small traces of the usual saline ingredients."†

Comparative Analysis of Serum in Health, Malignant Cholera, and Bilious Diarrhœa, by Dr. O'Shaughnessy, of London.

Ingredients.	Healthy Standard of Lecanu.	Malignant Cholera.		Bilious Diarrhœa.
		Barras.	Dewar.	
Water	906.00	854.00	866.80	921.00
Albumen	78.00	133.00	124.00	61.85
Urea	0.00	1.40	0.00	0.00
Organic, soluble in alcohol and water	1.69	4.80	4.00	5.20
Albumen combined with soda	2.20			
Fatty matter				
Crystalline	1.20	1.40	1.23	1.90
Oily	1.00			
Muriat soda potassa	6.00	4.00	2.17	5.00
Carbonate soda		0.00		
Phosphate do.	2.10		0.5	2.30
Sulphate do.				
Carbonate lime magnesia				
Phosphate lime magnesia iron	0.91	1.60	0.70	1.10
Loss	1.00	0.60	1.5	0.90
Total	1000.00	1000.00	1000.00	1000.00

* O'Shaughnessy, p. 35. † Ibid. p. 62.

The result of the experiments is, that the water and the salts of the blood are diminished in cholera maligna, and the albumen is apparently increased; the serum was devoid of the least action on litmus or turmeric papers, not therefore being acid as was supposed. The consistency of the whole mass was greater from the deficiency of the serous portion, but the crassamentum was chemically unaltered.

2d. The evacuations from the skin, although profuse, have not, I believe, been collected and analyzed; they apparently consist of serous fluid only. The discharges from the bowels and the stomach are so peculiar, as to be remarked as pathognomonic signs. They are usually very abundant, and vary somewhat in appearance during the progress of the complaint. No traces of bilious matter, and rarely any of fæces can be detected; sometimes the first discharges per rectum have a feculent smell; they are always of a light colour, as in cases of jaundice, being compared to that of oat-meal gruel or rice water; at first consisting of two portions, separating when at rest; one is a serous fluid, the other consists of light flocculi, being apparently an altered mucus. In the collapsed stage of the complaint, very frequently the serous portion is alone perceived; in one case I have noticed it precisely as pure as the serum of the blood. On chemical analysis, Dr. O'Shaughnessy found that the liquid portion consists of water, mucus, albumen in small quantity, and muriate, acetate, and carbonate of soda. The flaky matter in the case of Dewar, he is disposed to believe, was principally composed of fibrine, but "all practical chemists," he adds, "are aware of the extreme difficulty of distinguishing this substance, in a solid state, from coagulated albumen." Neither the blood, nor serum, nor evacuations were acid; the latter gave decided proofs of being alkaline.

These facts, collected during the prevalence of the epidemic at Newcastle on the Tyne, England, are confirmed by the analyses made by MM. Rose and Wittflock, at Berlin, Prussia, and by subsequent analysis made by Dr. O'S. at London. The dejections at Berlin were strongly alkaline and contained albumen. "In the case of Dewar, they contained the most remarkable of the principles deficient in his blood."* A glance at the table will show, that similar alterations in the blood did not occur in bilious diarrhœa, and "in all cases of ordinary diarrhœa, the blood preserved its normal proportions. Of more than one hundred cases of ordinary diarrhœa,

* O'Shaughnessy, p. 66.

the *dejections presented no single property of cholera evacuation.*"****
"I am entitled to conclude," says Dr. O'Shaughnessy, after alluding to his experiments, "that the *exudation* of the colourless parts of the blood constitutes one of the chief diagnostic characters of the malignant cholera."*

Respecting the condition of the organs and tissues post mortem in cholera maligna, little need be said, for it is manifest that a disease so rapid in its progress, will leave few or no alterations of structure, and the distribution of fluids during life will be but imperfectly manifested by the appearances which remain after death.

The skin remains more or less livid, but for several hours is warmer than before death; the voluntary muscles are rigid, and of a darker red; the arteries of the extremities are very small, and often contain soft, imperfect coagula, so also the veins.

The brain and spinal marrow are unaltered; the veins of the pia mater are usually preternaturally loaded, and there is some serous deposition under the arachnoid, and sometimes in the ventricles; there is also some turgescence of the vessels of the spinal marrow.

The lungs are remarkably healthy, especially as to colour and texture; sometimes they are emphysematous; the mucous membrane of the bronchi is of a dark-red colour generally, but the large vessels of these organs are not distended.

The heart is not enlarged; the right side contains portions of the dark, soft coagula, with some fluid blood; the left side is generally empty, or nearly so; there are sometimes slight serous depositions in the pericardium.

In the abdomen, the peritoneum is often preternaturally dry and adhesive; the liver unaltered, its vessels not usually distended; no bile in the pori biliarii, or ducts of the liver.

The gall-bladder usually contains bile, of a dark-green colour.

The stomach, small and large intestines, manifest a dark-red appearance on opening the abdominal cavity, which evidently depends on an injection of the blood-vessels under the peritoneum, as can be clearly demonstrated by dissection.

The mucous membrane of the alimentary canal varies much at the different stages of the disease: if death had occurred speedily before much or any serous effusion, it is often of a deep-red colour, (brick-red,) and sometimes there is a reddish-coloured fluid, or actual blood effused in the tube.

* O'Shaughnessy, p. 72.

The mucous membrane, especially of the lower portion of the ilium and of the cœcum, has sometimes been found excessively loaded with blood of a dark, tar-like colour; the vessels being gorged with this fluid, effusions having sometimes occurred into the substance of the tissues, as in ecchymosis.

If serous and other depositions have ensued, the membrane is often pallid and coated, especially in the large and small intestines, with a whitish, cream-coloured substance or altered mucus; when this was removed, the membrane was often very pallid, but usually some redness was still perceptible.

In most instances, some portions of the membrane are found injected, occasionally in stellated spots; sometimes in patches or ridges, especially where any undigested food or fæces remained in contact with the membrane.

The mucous follicles are found patulous, and the glands of Peyer and Brunner are often enlarged.

If the patients died during reäction, more redness, in lines and spots, and occasionally recent alterations, especially of the glands of Brunner and Peyer, were detected.

The spleen and pancreas were seldom altered.

The kidneys were natural in appearance; a little of the creamy mucus could often be expressed from their tubuli uriniferi, pelves, &c.; the bladder was generally firmly contracted; urine, when present, was of a natural colour and appearance.

Such are the leading facts connected with the post mortem examinations in cholera maligna; few of them can be regarded as constant, or as necessary consequences of this complaint. Those which are the most frequent are the rigidity of the muscles, the lividity and congestion of the skin and of the mucous membranes generally, particularly of the stomach and bowels, and slight congestion of the vessels of the pia mater, connected with the gruel-like contents of the alimentary canal, and a slight enlargement of the mucous follicles and glands. There is very universally no evidence of biliary or urinary secretion. All other changes observed were but occasional, and may therefore be deemed casual. In a female, for example, who died in about eight hours from the attack, ulcers secreting pus were found in large numbers in the small and large intestines, and about two ounces of pus in the cavity of the uterus, the walls of which were much thinned. This patient had been for years an invalid, and a pensioner on the public charities. In another body, dead in six hours from apparently perfect health, red circumscribed spots, sometimes ulcerated and even gangrenous, and always covered with purulent matters, were

detected. The exciting cause of the disease in this case was eating large quantities of green apples. The consequences therefore of prior disease of the stomach, bowels, and other organs, and the effects of occasional accidental causes must be carefully distinguished from those which necessarily result in cholera maligna.

Having thus rapidly surveyed the characteristics of cholera maligna during life and after death, we must endeavour to ascertain its *pathology*, that is, the actual condition of the general system, and of particular organs and tissues, considered as regards, first, their organic life, and second, their animal life.

First, we are to inquire into the condition of the organic life of the cholera patient. If the second or collapsed stage be regarded as the true type of the complaint, the evidence of sedation, or diminution of action in the general system, is undeniable. The cold and livid surface, the tearless eye, the pallid and cold tongue, the coldness of the breath, the weak, fluttering, almost imperceptible pulse, leave no mind in doubt respecting the prostration of vital excitement in all, or nearly all the organic tissues.

It is however contended that this sedation of the general system, and of most of the organs, is a secondary and not a primary condition—resulting not directly from the original epidemic cause, but indirectly from the occurrence of severe local irritation or inflammation—that vital excitement is so concentrated in a particular tissue, the gastro-intestinal mucous membrane, that torpor or prostration of the other tissues ensues. That this sedation is however the direct and immediate consequence of the epidemic influence, is, I think, fully proved by an examination of the symptoms preceding and accompanying the primary stage of the disease. There is no evidence at any time of vascular excitement, no frequency or irritation of the pulse, no dryness or heat of the skin, tongue, or any other accessible tissue. On the contrary, in many instances, long before there is any decided manifestation of the disease, at least to the inexperienced or unobserving, and of course prior to any evacuations, the skin will be found pallid, and of a darker tinge than natural, with a loss of elasticity, the features contracted, the tongue pallid, the appetite impaired, the urine diminished in quantity, and the stools of a light colour, indicating the deficiency of the biliary secretion. These are among the incipient symptoms, and, if careful observation be continued, it will be seen that these symptoms become more decided as the complaint advances; all of them characteristic of sedation—there being no evidence whatever of at least general excitation of the circulation at any period of the disease, whether of a mild or severe

type. This sedation of the general system of organic life is confirmed not only by the bronze-like or livid condition of the external tissues, but by the appearance of the blood in cholera, being, as already intimated, directly the reverse of that manifested in inflammatory diseases. A more striking contrast can hardly be presented than is exhibited between the black, tar-like blood of cholera, with its soft, imperfect coagulum and deficient serum, and the sizy-cupped blood of inflammation, with its scarlet-coloured and dense coagulum, and its abundant and pure serum. This change in the blood was not confined to the blue or collapsed stage as has been asserted, but although then most decided, yet could be noticed among the earliest of the premonitory symptoms more or less distinctly. Blood, whenever drawn from the arm of a patient under the epidemic influence, was darker than on ordinary occasions, and the coagulum which resulted was less firm. This remark has been made not only by myself and other physicians, but by some of the bleeders in this city during the late epidemic, showing that the cause of the change, whatever might be its nature, had an early influence.

The above views are, it is believed, confirmed by examination of particular tissues or organs; for in simple, uncomplicated cases of cholera, there are no indications of local irritation, but those of sedation were generally observed.

The condition of the cutaneous tissue in the incipient, as well as in the confirmed cases, has already been noticed; in all, the cold, inelastic, pallid or livid condition of the surface was early and continuously observed; a state directly opposed to the tense, florid, elastic, and heated condition of this tissue in irritative diseases. The same observation was strictly true of the lips, tongue—indeed of the whole mouth and fauces; the thermometer even indicated a loss of vital temperature, sometimes to 10 or 12 degrees.

The internal surfaces, there are strong reasons to believe, were in a similar condition. There was a deficiency of secretion from the lachrymal gland, without any symptom of irritation. There was no evidence of inflammation in the membranes or substance of the brain or spinal marrow, and none has been contended for. The lungs were so far implicated in the affection, that there was frequently a difficult and oppressed respiration, often with a sense of stricture and uneasiness; and post mortem, the mucous membrane was very universally found preternaturally red, or even livid. That these phenomena did not however depend on irritation or inflammation, seems to be generally conceded—inasmuch as there was no cough, or pain, or other symptom of active disease, and no expectoration; the expired

air was colder than natural, affording a very positive index of the vital heat of the whole mucous membrane; and post mortem, no lymph, or pus, or ulceration, or other products of inflammation were observable, but the structure of the lungs was remarkably perfect.

In the abdomen, we infer there was sedation of the liver from the early deficiency of bile during the premonitory symptoms, and from its entire suppression in all cases after the disease was fully formed, while no symptom of hepatitis was manifested during life, and none of its consequences after death. So also, as respects the kidneys, there was a diminution or suppression of their secretion in all cases, and after death they were found in a normal condition. Respecting the secretion of the pancreas, whether increased or diminished, we of course have no evidence, but this organ and the spleen underwent no perceptible change in cholera. Few pathologists will deny the correctness of the inference, that the organs and tissues above alluded to, are in a state of sedation, varying in degree in the different stages of cholera maligna; but great discrepancy of opinion still exists as to the pathological condition of the stomach and bowels during the progress of the disease. The question is no doubt a difficult one, arising as well from our ignorance of the true nature of their physiological actions, as from the apparently contradictory facts accumulated on this subject.

I have no hesitation however in expressing the opinion, founded on an attentive examination and consideration of these facts, that there is a sedation of organic life in the alimentary canal; especially that there is a diminution of capillary excitement throughout the whole extent of the mucous membrane, from the mouth to the rectum, in all cases of a simple, uncomplicated character. The facts and arguments in support of this opinion, I shall presently adduce more at length, but it may be now stated, that the usual and acknowledged symptoms of gastritis are not commonly observed, such as sensations of heat and burning; pain aggravated by pressure; fulness and tension of the abdomen: there are no sympathetic irritations; the liver remains torpid; the tongue, instead of being warm, red, and pointed, with elevated papillæ, is cold, livid, and flaccid; there are no burning sensations in the throat, and no excitement in heart, arteries, or capillaries: the evacuations differ in appearance, and chemically* from those which occur in cases of gastro-enteritic inflammation; there are no lymphatic or membranous effusions, no purulent secretions, and even the mucoid depositions have an appearance en-

* Vide statement above respecting the fluids in cholera.

tirely dissimilar from those observed during inflammatory diseases of these tissues.

Respecting the post mortem appearances, I shall endeavour to show, that they differ from those resulting from active irritation, and that the opinion now advanced, is not only perfectly consistent with the existence of intense thirst, with the vomiting and purging of serous fluids, and great congestion of the mucous membrane, but is even confirmed by some of these phenomena.

The dry condition of the peritoneum, so generally observed post mortem, without any indications of inflammation, show that the capillaries of this extensive serous membrane were also in a torpid condition—a state, it may be remarked, which does not exist in cases of gastro-enteritic inflammation, however acute or extensive.

From this review of appearances during life and after death, we infer that there is a sedation of the organic actions in the incipient, as well as confirmed cases of cholera, on internal as well as external surfaces, of the large blood-vessels and the heart, as well as of the capillaries.

It is of practical importance to remark, that this sedation is first manifested in the capillary tissue, afterwards in the larger vessels and the heart—as we notice, the pale, livid, inelastic condition of the skin, the contraction of the features, the livid and cold tongue, the diminution of the urinary and biliary fluids, while the pulse, although free from irritation, is full, often strong and laboured. In a short time the pulse becomes weak, small, fluttering, imperceptible, and the actions of the heart weaker until they cease in death.

This being the condition of the circulatory vessels, alterations must occur in the distribution and in the quality of the blood.

1. The distribution of the fluids is disturbed. The blood, which in health circulates rapidly in the capillary vessels, constituting, no doubt, a large proportion of the circulating mass, and affording materials for secretion and nutrition, is no longer actively determined to these remote vessels. Little blood evidently enters these capillaries; and when introduced, moves very tardily, and, in bad cases, is absolutely stagnant. This is shown, not only by the lividity and coldness of the surface, but by the effect of pressure, which empties the vessels with difficulty, while the part pressed long remains pallid and sunken. The experiment may be satisfactorily made on the mucous membrane of the mouth as readily as on the skin. The blood thus excluded from the capillaries must be thrown upon the larger arteries and veins, especially of the viscera, causing congestion of the organs. That such congestion actually occurs, is manifested by

the fulness and slowness of the pulse in the early stages—by a sense of fulness about the head, chest, and abdomen—by the oppression about the heart, lungs, and præcordia, often with a sense of stricture or weight—by the great and immediate relief afforded by venesection, and by the turgescence remaining after death in the mucous membranes of the stomach and bowels—in the veins of the brain and spinal marrow.

As the sedation extends to the large vessels of the extremities, the blood is here also imperfectly circulated, and the evidences of visceral congestion are more decided, notwithstanding the immense effusion of serous fluids.

2. The blood is altered in quality, as has frequently been mentioned. How this alteration is effected is not known, but it is generally acknowledged that the purity of the circulating fluid in health is preserved mainly by the respiratory process, and by the secretions from the liver and kidneys; and that these processes in the lungs, liver and kidneys are effected, in some way, through the instrumentality of the capillary vessels. The normal excitement of these vessels being diminished, it necessarily results that these vital processes are inadequately executed; the blood therefore is not completely purified; the elements of the urine and the bile are not eliminated by their natural emunctories,* and hematosis is imperfectly executed. The quality of the blood must therefore be altered, and its colour must manifest the venous rather than the arterial hue, as observation has clearly demonstrated. It may be also remarked, that if these observations be correct, the early change noticed in the blood is indicative that the sedation of the capillary vessels of the mucous membrane of the bronchi is among the primary symptoms of cholera, cotemporaneous with the torpor of the skin, liver, &c. and prior to any increased evacuations from any of the tissues.

Connected with these changes in the quality of the blood, should be noticed the change in its consistency. Its viscid condition is supposed to be dependent on the loss of serous fluids, and is considered by many as an important circumstance in inducing and keeping up the stage of collapse even to a fatal termination. That some influence may be thus exerted is probable, but that it has been much exaggerated, is proved by the fact that patients have occasionally recovered from very low stages of collapse; their blood not being too viscid for the sustenance of life, when there is a suitable reäction of the capil-

* Vide table, where it will be seen that *urea* was detected in the serum of cholera blood.

lary system. It may be mentioned also, that such recoveries show that the blood in collapse is still capable of being changed in the lungs when reäction of the capillary system ensues, notwithstanding the loss of serum; a fact confirmed by the experiments of O'Shaughnessy, who affirms, p. 41, that its capability of aëration is shown to be preserved.

From the analysis now presented of the symptoms of cholera, and of the post mortem appearances, it results that there is a primary sedation, (diminution of excitement,) in all the organic actions, followed as a necessary consequence by a passive congestion of an impure blood. It should be added, that this congestion of the internal organs oppresses them, and of course aggravates the symptoms of sedation. The natural disposition to reäction is thus still further resisted, being repressed not only by the influence of the original poison, but by the quantity and quality, perhaps also, by the viscidity of the blood congested in the vital viscera.

That these conclusions to which I have been brought by clinical observations, without any, the least bias from any preconceived opinions, may appear more plausible to others, it becomes requisite to examine some of the facts and arguments adduced to prove that the gastro-intestinal mucous membrane forms an exception to the idea of universal sedation, that this tissue is in a state of high organic irritation, and that all the phenomena of cholera maligna depend on this inflammatory condition of the stomach and bowels; the vital powers and actions being prostrated by the extent and severity of the inflammation, and by the free evacuations. The operation and effects of a severe emetico-cathartic medicine have been adduced as exemplifying and illustrating the state of the mucous membrane and the general system in cholera.

To me, the whole of this opinion is evidently inconsistent with the experience of its own advocates; for they all maintain, that prior to actual collapse, however severe the spasms, or profuse the discharges, cholera can be very easily managed—that by slight remedial measures, such as immersion of the feet in a warm bath, warm fomentations, and some camphor and laudanum, all the phenomena of the disease vanish, and few, if any, need perish during the first stage of the complaint. Certainly these observations cannot be predicated of severe and extensive cases of gastro-enteritic inflammation. It is remarkable that this inconsistency attaches chiefly to the Broussais school, who have so inordinately magnified the effects and dangers of gastro-enteritis.

If there be this inflammatory irritation of the mucous membrane,

mild cases of cholera, (very many of which occurred,) would, according to received opinions respecting inflammatory diseases, be attended with febrile irritation—the sympathies of the body were not destroyed, as the system readily reäcted in such cases under mild stimuli; but no such sympathetic irritation appeared.

Respecting the analogy between cholera maligna and that prostrated state of the system brought on by a corrosive poison, or an irritating cathartic, the appeal may safely be made to clinical experience to exhibit, even to the unprofessional observer, the most marked discrepancies. In both, it is true, the system is prostrated, but in the latter cases we shall look in vain for the suppression of the biliary secretion, the cold and livid tongue, the livid surface, and all the characteristic physiognomy of prostration from the poison of cholera.

It is said, that cholera maligna must be inflammatory, as the exciting causes are all of them irritants: but this assertion is not universally correct. Perhaps the most frequent exciting cause was change of temperature from warmth to cold. The attacks frequently came on at night from exposure to the weather, sleeping in a draught of air, throwing off the bed-clothes, jumping suddenly out of bed upon a cold floor or mat: spasms, vomiting and purging, were thus frequently excited by the sedative influence of cold acting on a system predisposed to cholera. Hence the almost universal prophylactic direction was to keep the body warm, and to avoid exposure to cold during the epidemic; and perhaps no direction was more beneficial, and no single circumstance more conduced to the preservation of those in comfortable circumstances; while the poor and vicious, who were more exposed and more negligent, suffered severely. In the Philadelphia Alms-house, it was found that the number of cases among the maniacs and idiots was proportionably much greater, and of a more severe type, arising no doubt from their neglect of clothing, especially at night. In all these cases, the sudden diminution of the cutaneous circulation and secretions, and the consequent internal congestion, was the immediate or exciting cause.

But irritants are also exciting causes; of these, food from its quality or quantity is among the most frequent. On the supposition, that sedation exists as the immediate effect of the epidemic influence, the digestive powers of the stomach are enfeebled, and hence, as experience of almost every one can testify, even the ordinary and useful articles of diet were not readily digested. Should, therefore, food prove indigestible from its quantity or quality, the common symptoms of indigestion were excited, characterised by a great sensation of oppression and load at the epigastric, with restlessness and jactitation;

cold, pallid surface; weak pulse, &c. In other words, the powers of the stomach and system were oppressed, even by comparatively slight errors of diet, owing to the peculiar predisposition of the system, and this oppression was often maintained by the same cause, even to a fatal termination. That the symptoms in these cases were not usually dependent on inflammation, is shown by the immediate relief often induced by vomiting—the cause being removed, the effect disappears. That inflammation was sometimes excited by acrid ingesta, no one would deny, but such inflammation is not essential, and however it might aggravate the symptoms, must be regarded merely as a complication to be presently noticed.

Respecting laxatives, my own experience does not confirm the assertion, so frequently made of their injurious effects. I often, indeed continually, prescribed them during the premonitory symptoms, and never knew them to act otherwise than beneficially. That hydragogue, irritating cathartics would be injurious, inducing prostration, there can be no doubt, on principles already advocated, without any support to the doctrine of inflammation.

Another argument adduced in favour of the gastric pathology, is drawn from the liability of the intemperate to cholera, because they are always the subject of chronic gastro-enteritis. Their liability, however, should rather be referred to the exhausted condition of their vital powers generally, and to their proneness to congestive diseases. Hence the depressing influence of the epidemic is sooner experienced, and congestion with its consequences more easily induced.

As to the sensations of heat about the epigastric, the burning and griping pain of the stomach and bowels, the violent tormina or tenesmus, or spasms of the alimentary canal, I have no idea that they ever occur as the ordinary symptoms of cholera; if present, they depend on some accidental complication. I have never in India, or in this city, witnessed tenesmus or spasms of the bowels in a well-marked case of cholera maligna; the spasms are located, not in the bowels, but in the abdominal muscles, and should tenesmus and other dysenteric irritations exist at the access of cholera, they have always in my practice disappeared until the symptoms of cholera were relieved. Ordinarily patients complain only of the cramps of the voluntary muscles; the abdomen is free from tension, and can be pressed upon without any pain or tenderness being excited.

The distressing thirst which characterizes cholera, is dwelt upon as a strong argument in favour of inflammation, but it exists in congestive as well as inflammatory diseases; is as troublesome

during the cold as the hot stage of fever. It is accompanied, not by a dry, red, clammy, and heated state of the tongue, mouth and fauces, but with a soft, moist, cold, and livid condition of these tissues. It increases with the symptoms of collapse, and decreases as signs of excitement appear. Its progress also is *pari passu* with the great susceptibility of the skin to external stimuli, commencing and increasing, or declining together. Hence as all acknowledge, that the surface of the body is not inflamed in cholera, but that its susceptibility to impressions depends on a morbid condition of the nerves of sensation, we have a right to conclude that the thirst in cholera is the result, not of a sanguine irritation, but of a peculiar affection of the nerves. It is a *morbid sensation.*

Again, it is asserted with much confidence, that there must be inflammation, because there is vomiting and purging of sero-mucoid fluids in immense quantities.

That the mere act of vomiting is a proof of sanguine irritation, few perhaps will contend, who reflect that the loss of blood will create nausea and vomiting, even in healthy individuals.

Respecting the profuse evacuations so generally observed in cholera, the question is of importance, and returns at every view of the subject. Do they demonstrate an excited or irritated condition of the exhalants in opposition to the arguments which have been adduced, or may they not be simply effused, poured out from the overloaded tissues, in the same way that blood is effused in passive hæmorrhages? That passive congestions are usually followed by effusion of serous fluids, and that immense evacuations may occur from tissues free from inflammation, and even in a prostrated condition, the following undeniable facts clearly demonstrate.

1st. A profuse serous discharge occurs from the skin of cholera patients, is noticed in the colliquative sweats of hectic fever, and in the cold perspirations which so constantly indicate the approach of death, or which cover the pallid surface of one prostrated under severe pain however inflicted. In none of these cases, will any one suppose that there is an inflammation, or even irritation of the cutaneous tissue, marked as it is by pallor or lividity, by coldness and contraction, and every other sign which can indicate diminution of excitement and death-like prostration.

2d. A similar sero-mucoid fluid is often observed from the conjunctiva of the eyes, in states of great prostration. This is often accompanied by a sudden engorgement of the vessels of the conjunctiva, at a moment when all action is disappearing in every

tissue of the body. It is the stasis of blood, and a consequent effusion of its thinner portions, immediately preceding its universal arrest in death.

3d. Mechanical interruptions to the venous circulation, causing an engorgement of the small veins, will be followed by an evacuation of the thinner portions of the blood, without any evidence of irritation and inflammation. Hence a tourniquet, or ligature, or bandage, moderately tightened on a limb, will cause œdema of the hand or foot. Hence the œdema of the lower extremities in pregnant females, and in patients with varicose or diseased veins, &c.*

4th. The influence of cold suddenly applied, when the circulation is active, renders the part livid and anasarcous, without any indication of inflammatory excitement.

Many similar facts might be presented, very positively demonstrating that no argument can be drawn in favour of inflammation from the evacuations in cholera. On the contrary, when it is remembered that these evacuations differ in their appearance, and on chemical analysis, from the fluids evacuated in acknowledged gastro-enteritic irritations; that they contain, in some instances at least, the principles deficient in the blood;† that the natural secretions diminish or disappear on their occurrence, and return when they are arrested; that the muco-purulent secretions of dysentery are also incompatible with their existence, disappearing on their occurrence, and often returning when they cease; that no relief is afforded by these discharges, the circulation becoming weaker and slower, and the lividity and prostration increased, the conclusion seems unavoidable that they are passively effused, and not actively secreted. They constitute a serous hæmorrhage. Hence we may also conclude, that the condition of the skin, cæteris paribus, making allowance for difference of organization, is a prototype of the mucous membrane of the alimentary canal; in both there is congestion and lividity from dark blood; while a clammy serous evacuation occurs on the surface, a sero-mucoid effusion is poured from the intestines. It is believed that the results of treatment confirm these inferences as will be shown hereafter.

* "When the mechanical hyperæmia is carried to a certain extent, other phenomena may arise as a consequence. Thus the serous portion of the blood may escape from the over-distended vessels, just as water or any other liquid transudes through the permeable sides of a vessel in which it suffers compression." *** "And although these effusions have nothing active in their nature, yet are they considerably diminished, and sometimes altogether removed by blood-letting."—*Andral, Pathological Anatomy, Chapter on Hyperæmia.*

† Vide analysis of the fluids.

Finally, much dependence is placed on the post mortem appearances, as proving the existence of inflammation. The redness often observed we have endeavoured to show is the result of passive, not active congestion; it was, in uncomplicated cases, greatest when patients died early, and was lessened by the effusions; in this respect differing from active congestion, the remains of which are not observable if patients die speedily. The sub-peritoneal tissue of the intestines was remarkably loaded with blood in almost every case of dissection, even when the mucous membrane was pallid—this is peculiar to passive collections; and the colour was always darker than ordinary. There were none of the usual alterations of tissue observed from irritation; no thickening and no softening; strips from the mucous membrane being as long and as firm as on ordinary occasions, according to the report of Dr. Pennock. The difference existing between the sero-mucoid fluids of cholera, and the lymphatic and purulent formations of inflammation have already been noticed.

The enlargements of the mucous follicles, and of the glands of Peyer and Brunner would seem to indicate inflammation, but such enlargements were not universal,* (hence cholera could exist and be fatal without them;) they were seldom very great; they are frequently observed in other diseases, and allowing them to be inflammatory, were therefore altogether inadequate to account for the peculiar symptoms and fatality of the epidemic.

While thus contending that a universal sedation is the primary and essential pathological character of cholera maligna, it is not denied that complications with inflammatory diseases may frequently occur; indeed they are not uncommon, and have no doubt retarded our progress in the study of cholera, by fixing attention on points of secondary importance, while the great leading and original phenomena have been neglected. But this complication is regarded as impossible; how can irritation and sedation coëxist? Of course, they cannot at the same spot, at the same time; but when any portion of a tissue is inflamed prior to the accession of cholera, this inflammation although diminished by the sedative influence of the epidemic cause, may nevertheless continue while the rest of the tissue is torpid and passively congested; again, after sedation in any tissue has occurred, particular portions may become inflamed from any

* In thirty-six examinations made in Paris by M. Louis and Andral, reported by Drs. Pennock and Gerhard, "the glands of Brunner were developed in a notable manner in rather more than two-thirds of the cases; those of Peyer were more visible than usual in a rather less proportion but rarely projected above their ordinary level." p. 76.

acrid irritant. To exemplify these principles,—an individual otherwise in health, has ulcers on the surface of the body, and afterwards becomes the subject of cholera; the ulcers may continue moderately inflamed, and may even secrete purulent matter while the whole cutaneous tissue is cold, livid and torpid:—in another case, after cholera has ensued in an individual previously in a normal condition, severe irritations from wounds, mustard, cantharides, &c. may be excited on the skin, which in every other portion, continues to manifest symptoms of diminished excitement. On these principles, most of the complications from inflammation and ulceration of the mucous membrane may be explained. Thousands, no doubt, of patients with chronic gastro-enteritic diseases, have been the victims of cholera epidemica, and of course, post mortem, the consequences of inflammation will be found conjoined with those peculiar to sedation and passive congestion. This was universally the case with the intemperate, who so remarkably suffered from the epidemic. So also, if no prior inflammation existed, irritation with all its consequences, was frequently excited by improper food, by acrid medicines, &c. in particular portions of the stomach or bowels. These cases afford examples of passive and active congestion, in the same tissue; in the same manner that this combination was exhibited by a blister on the skin in cholera.

Another and third source of inflammation arises from the changes occurring during the stage of reaction; then, when the secretions are returning, and the pulse and skin even excited, inflammation is developed in various organs, and is productive of its usual consequences.

There may be other sources of irritation of the mucous membrane, but the evidence deducible from the symptoms and from dissection, shows that, in all cases, such inflammatory affections are trifling, compared to the intensity of the disease; that the symptoms indicating the state of the general system and of particular organs, are essentially different from those ever produced by gastro-enteritis, however acute; and finally, that the most intense cases have often terminated fatally without any indication of inflammation before or after death.

Second.—What is the condition of the organs of animal life,—the brain, spinal marrow, and nerves of sensation and motion?

In the introductory remarks, the relative influence exerted by the organs of the two lives on each other was alluded to, and especially the fact that, as the cerebro-spinal system for its development and support is entirely dependent on the organic actions, it must be to a certain extent affected by the diseases of organic life. In cholera

maligna I have already detailed the changes in this system, so far as its circulation is concerned, maintaining that it was the subject of sedation and congestion of its capillary and larger vessels, there being no evidence of inflammation or its consequences before or after death.

Notwithstanding this depression of organic actions, there is abundant evidence of *a morbid irritability of the brain and nerves.*

The irritability of this system is manifested by the wild and anxious expression of countenance at the commencement of the attack, by the activity of the intellectual powers in the first stage of the disease—an activity which, though afterwards much diminished, is comparatively great, even in extreme collapse, and sometimes to the last moments of existence. There is often great intolerance of sound, the least noise disturbing or agitating the patient; indeed, all the senses are remarkably acute. The sensibility of the skin is excessive; even when this tissue is perfectly livid and cold, and the circulation seems to be completely arrested, the common warm and stimulating applications are intolerable. The patient begs that they may be removed, and should inflammation be excited, the complaints are often distressing. Experience has shown that great heat, alcoholic and other vapours, sinapisms, cantharides, &c. are often productive of great mischief, in consequence of the extreme susceptibility of the cutaneous nerves, increasing the restlessness and distress of the patient, augmenting the serous effusions, the lividity and coldness of the skin, and prostrating much more rapidly the organic actions.

The same nervous sensibility is manifested by the intense thirst by which patients are usually tormented, and which we have endeavoured to show, is independent on irritation or inflammation.

The evidences of nervous excitement are most decidedly exhibited in the spinal nerves. Even during the premonitory symptoms, and often when no other evidence exists of the epidemic influence, the patients complain of neuralgic pains and of slight spasms of the voluntary muscles. These spasms increase, and often become agonizing in the extreme, during the first stage of cholera, and they sometimes continue during the stage of collapse, even until the close of life, augmenting the jactitation of the patient, the exhausting sweats, and all the symptoms of prostration; in some cases appearing to be the immediate cause of death. Even after death, that is, after the cessation of organic life, animal life is manifested, as already intimated in the contraction of the muscles, producing even motion in the otherwise lifeless members.

During the stage of reäction, the same irritability of the nerves is often witnessed in the watchfulness and sleeplessness of patients;

their susceptibility to noise, and disposition to nervous delirium or mania, which are often so excessive as to exhaust the organic powers, and thus destroy the well-founded expectations of recovery.

In these indications of nervous irritability, there was great variety in different patients, depending on various causes, as original temperament; habits of living; prior diseases; strength, &c. &c. but especially on the condition of the circulation in the brain and nerves. Sometimes there were few spasms, or other evidence of irritability, owing to great congestion of the brain; the patient becoming dull, stupid, and comatose. In a majority of instances, the presence of the spasms seemed to be dependent on a certain degree of congestion, acting as an exciting cause, inasmuch as they were relieved by the loss of blood, or by revulsives increasing the cutaneous circulation. There were many fatal cases, without any suffering from spasms, and in cases, otherwise mild, the rigidity of the muscles and the intensity of the suffering were excessive.

In the preceding observations, we have conscientiously endeavoured to analyze the phenomena of cholera maligna, separating the accidental from the essential and characteristic symptoms of this dire pestilence, and from these last to deduce the actual state of the tissues and organs of the economy; in other words, the *pathology of cholera.*

The conclusion to which we have been brought is, that in cholera maligna there is *a universal sedation of the organic life*, manifested primarily in the capillary tissue, then in the larger vessels and heart, with a consequent passive congestion of an impure blood in the internal tissues, aggravating the sedation, and resisting the natural disposition to reäction; and that there is also a *peculiar and morbid irritability* of the cerebro-spinal nervous system, the apparatus of animal life.

Cholera maligna is therefore virtually a disease, not of irritation, but of sedation; not with active circulation or inflammation in any tissue, but of torpid circulation and passive congestion. Thus constituted, it is modified by temperaments, constitutions, habits, sex, age, prior diseases, strength, &c. of the patients, as other affections, and is often complicated by local irritations from the quantity or quality of the ingesta, or from improper treatment, and by the actual presence of inflammation in one or more tissues, &c. aggravating its symptoms and dangerous character.

This being assumed as the nature of the disease, the therapeutical indications are clearly and easily deduced.

1st. *Organic life is to be stimulated*, that the healthy capillary

functions may be reïnstated. Thus the natural secretions will be restored; the blood be purified by the appropriate organs, the lungs, liver and kidneys, and congestions be relieved.

2d. *The irritability of the animal life is to be moderated*, that the mental agitation, the delicacy of the senses, the morbid sensibility of the skin, the excessive sensation of thirst, the neuralgic pains and the violent spasms may not be injurious.

These apparently opposite indications should be borne in mind in the treatment of every stage and variety of this complaint, and should receive suitable and proportionate attention; so that one set of functions need not be stimulated or depressed to the injury of the other; organic actions be so excited as to aggravate the nervous symptoms, nor these nervous affections be regarded as the sole object of treatment, to the neglect of the organic depression. By judicious, constant, and persevering attention to these indications, we can alone, I think, scientifically and correctly manage cholera maligna, although here, as in most other diseases, patients have recovered, and have perished under every variety of treatment, however judiciously prescribed, or empirically administered.

In detailing therefore the treatment, tested by experience, and resulting from the above pathological views, and to my mind, establishing their correctness, the different stages of the disease must be passed in review.

1st. *Treatment of the precursory symptoms.*—As formerly intimated, there is a moderate depression of excitement in all the organic actions, prior to the occurrence of decided symptoms of cholera, extending to the mucous membranes of the lungs, alimentary canal, liver and kidneys, with some nervous irritability. Hence the indications are, to restore the normal activity of the secretory vessels, and to moderate the nervous excitement. These indications may, at this period, often be fulfilled by the mildest remedies. External measures are often adequate for this purpose, such as frictions, hot pediluvium, manuluvium, warm bathing, and, as acting more constantly and permanently, confining the patient in bed, or using warm clothing, especially flannel, next to the surface; also by the application of simple or even irritating plasters to susceptible portions of the body. These measures should be assisted by the use of warm drinks. All exposure to cool air, or to a current of air, and the use of cold drinks, are very dangerous as increasing the sedation of the surface and internal congestions. Patients therefore should sleep with much warm covering, paying particular attention to their limbs, and avoiding sudden transitions of temperature, especially on rising from bed. In some

cases, it may be necessary to administer mild diaphoretics, as the sweet spirits of nitre, the saline mixture, assisted, it may be, by minute doses of calomel.

But as the irritability of the nervous system usually demands attention, as well as the sedation of the capillaries, the *narcotic stimuli*, in small and repeated doses, become valuable remedies.* Of these, camphor is generally to be preferred, as being a warm diaphoretic, while it quiets nervous irritation. It has been much and deservedly celebrated. Opium, in its various preparations, is often invaluable in fulfilling the same indications, and should frequently be conjoined with the camphor, or be employed as its substitute.

Great attention to *diet* is of the utmost importance, predicated on the simple principle of sedation of the organic actions of the digestive apparatus. Hence the diet should be simple and easy of digestion; for, as already intimated, next to cold, the occurrence of indigestion was one of the most frequent exciting causes of cholera maligna.

This principle should regulate the diet of all the inhabitants where the epidemic influence is prevailing. If no disease be actually present, the diet may be, and indeed ought to be *nutritious*, and sometimes even rendered moderately stimulating by condiments to facilitate the normal excitement and secretions of the digestive fluids. Hence, meat and the farinacea, in moderate quantities, occasionally with spices, form the safest general diet for well persons during the epidemic. Some whose digestive powers are usually vigorous, might employ fresh vegetables well boiled with advantage, and even ripe fruit is often useful, from the well known influence of vegetable matters on the excretions. Great care should, however, be exercised, as even the most vigorous are depressed by the epidemic influence, and indigestion, with all its dire effects, might be the consequence.

Should any premonitory symptoms exist, solid food, of course meat, should be abandoned, and the farinaceous matters with spices be alone administered. If, however, the stomach be oppressed by indigestible food, or any acrid ingesta, a mild emetic is of great value by removing the source of depression and facilitating general reaction. On the same principle, laxatives, especially magnesia or rhubarb, or castor oil, are often highly important, particularly when the

* This class of medicines having at the same time a sedative influence on the nervous system, and a stimulating effect on the organic actions, (whence their name,) is admirably adapted to the peculiar state of the system we are considering, and would seem indeed to confirm the idea, that this combination of organic depression and animal excitement, is not uncommon.

patient has been long costive. I never knew them act as exciting causes of cholera, as has been alleged, but have uniformly found them useful even when diarrhœas or slight dysenteries, ("cholerine,") have been present, but by removing sources of depression, and restoring or keeping up natural secretions, they do good. They should be accompanied or followed by the use of warm drinks, by small but repeated doses of camphor, or other narcotic stimulus, usually combined with mild diaphoretics and aromatics.* The precursory diarrhœa will usually disappear under the above treatment, but may occasionally demand mucilaginous or anodyne enemata, or the more decided plan presently to be indicated.

2d. The *treatment of the first stage of cholera.*—Should the premonitory symptoms be neglected, or injudiciously managed, the sedation of the capillaries is more marked, and there is fulness or oppression of the larger vessels with the severe consequences already detailed. The remedies already recommended should now be actively exhibited, and will sometimes be adequate for the emergency by recalling the circulation to the extreme vessels and restoring the secretions, but generally direct evacuation must be employed to relieve the congestion which resists the natural disposition to reäction, and the effect of remedial measures. *Copious bleeding* from the large veins had the most beneficial tendency, not simply by unloading the vessels, but by thus indirectly facilitating reäction—manifested by more fulness and activity of the pulse, and renewed activity of the capillary circulation. The advantages were generally striking and immediate; the feelings of oppression about the head, lungs, heart, and abdomen, were at once relieved—the surface would become warmer, even the livid colour would be lessened—the vomiting and purging would diminish or disappear, while a warm perspiration be universally diffused over the surface, indicative of a similar return of the internal secretions. Even when all these good effects were not immediately displayed, the symptoms would be ameliorated, and the susceptibility of the tissues to remedial agents be aroused.

In this and similar states of the general circulation, the object and the effect of venesection is, not as in inflammatory diseases, to reduce the pulse and diminish capillary action, but by relieving congestion and oppression, thus indirectly to facilitate the development and activity of the arteries and capillary vessels. That this indication

* The following formula, recommended by Dr. Parrish, I found very grateful:—℞. Sp. Lavend. co. ℥i.; Laudan. ʒi.; Sacch. alb. ʒij.; Aq. camphor. ℥iij. M. S. ʒij. or ʒiv.

is fulfilled, is evinced not only by the increasing fulness and frequency of the pulse, and the warm perspiration, but also by the changes occurring in the blood, even during the operation; for it was observed that the blood first discharged was of a very dark colour, and in many instances flowed with difficulty, and tardily, even from a large orifice in a large vein, sometimes *guttatim*, but in a short time the momentum increased, and the colour improved, so that a full stream of almost arterialized blood would sometimes be poured forth with considerable impetus. As, in these cases, the pulse would rise from its depressed condition, becoming full and active, as the oppression was ameliorated, and as the secretions and the heat of the skin returned, large quantities of blood could often be beneficially abstracted; ℥xx. to xxx. could frequently be taken from even delicate individuals, while from the strong and plethoric I have taken ℥lx. to lxx. with great and immediate advantage, and without any reason subsequently to repent of this active depletion. The patient was usually found at a subsequent visit with a warmer skin, a fuller pulse, and more natural secretions. In cholera maligna, we bleed not to diminish excitement, but to relieve oppression.

After venesection, the patient might sometimes be trusted to the mild measures already indicated, to mild *diaphoretic anodynes*, with warm and moist applications to the surface. But if the disease be severe, more active measures are demanded to excite and keep up the secretions, as large doses of camphor and ammonia, in the form of powders, or of mixture, Dover's powder, assisted by warm drinks, such as wine whey, or warm aromatic infusions, &c. Stimulating frictions to the extremities, with spirit of ammonia, spirit of turpentine, Cayenne pepper, &c. the application of sinapisms and other rubefacients, and sometimes of blisters, were very advantageous in quickening and keeping up the cutaneous circulation—as also of dry heat, by means of bottles of hot water, hot bricks, sand, oats, &c. where the sensations of the patient would tolerate these measures.

To fulfil, however, the all-important indication of reëxciting the capillary actions, no medicine was comparable to calomel. Other remedies were useful in accomplishing this object, but however rapid in their action, their effects were often trifling and transitory, compared to the decided and permanent influence exerted by the mercurial preparations. Calomel was usually preferred, and was given in doses of gr. ij. or iij. alone, or in combination with diaphoretics, every hour, or every two or three hours, until some twenty or thirty grains were administered, or until the symptoms were relieved.

Operating slowly, but very certainly, upon the extreme vessels, augmenting their circulatory and secretory actions, it admirably fulfilled the indication presented in cholera, and was therefore the main dependence of the practitioner. Thus, by obviating the sedation of the exterior vessels by direct and indirect means, by suitable stimuli and by venesection, congestion and consequently effusion are obviated. The skin now secretes a natural perspiration, and the biliary and mucous secretions are substituted for the effusions from the congested vessels. Frequently will it be found that all the peculiar discharges in cholera are arrested by bleeding and calomel, separately or combined.

As soon as any evidence of capillary reäction is manifested, the calomel should be followed up by the free exhibition of laxative medicines, such as the ol. ricini, senna, salts, Seidlitz powders, &c. all of which assist in exciting the natural secretions, and relieving congestion, and are also useful in emptying the alimentary canal of any irritating contents, especially the biliary and other secretions, as they are formed. Should the calomel and cathartics operate favourably, bilious and mucous dejections will be observed as substitutes for the serous effusions, which, with no beneficial tendency, were exhausting the powers of the patient.

On these principles, and by the above-mentioned remedies, the organic life in this first stage of cholera maligna, may be managed so that in very few instances will the patient pass into the second or collapsed stage, unless severe complications exist. No benefit, I conceive, is derivable from the use of anti-emetics, or astringents, with the view of checking the vomiting and purging of serous fluids. These effusions will continue so long as the congestion remains; hence the best, if not the only certain means of relief, is to remove congestion by bleeding, and by those measures calculated to restore the natural secretions from the capillaries. So also no confidence was placed in any medicines said to arterialize the blood, such as the saline medicines recommended by Dr. Stevens, formerly of Santa Cruz, and now of London. Believing that the morbid condition of the blood was owing to the diminution or suppression of the natural excretions from the lungs, liver, kidneys, skin, &c. I necessarily inferred that the best method of purifying the blood, was to restore the excretions, and believe that this view was confirmed by experience. For this purpose the saline medicines were useful, but as already hinted, were far inferior to calome', or even the use of hot drinks, the warm bath, &c. &c.

In this stage, particular attention must be paid to the irritations existing in the organs of animal life, especially to the spasms, pain, intense thirst, &c.

The spasms are usually most severe at this period, and as formerly mentioned, seem to be intimately associated with *congestion* as an aggravating or exciting cause, being however essentially dependent on the peculiar morbid irritability of the nerves. Hence, the relief of congestion by *venesection*, warm bathing, diaphoretics, &c. as already advised, always mitigated, and sometimes immediately relieved the spasms. The tenderness of the surface, the neuralgic pains, and slight spasmodic actions which remain after congestion is removed, are easily combated by anodyne frictions, by external warmth, and by the internal use of camphor, opium, æther, &c. directly diminishing nervous excitement.

At this early period, the morbid sensation of thirst is becoming very distressing, and the anxiety of patients for *cold drinks* is exceedingly urgent. The free gratification of this desire is productive of much mischief by increasing the load and oppression at the præcordia, and aggravating the vomiting; and thus the exhaustion of the patient is enhanced by the quantity of fluid, and by the sedative influence of cold on the gastric mucous surface. Cold drinks if administered at all, should be given therefore in very small quantities, and at regular intervals, but in *ice* we have a most excellent substitute. Ice in small portions, allowed to dissolve in the mouth, is exceedingly grateful to the patient. It quiets this morbid sensation, and extending its influence to the nervous system generally, moderates its peculiar irritability, and the consequent restlessness, jactitation and anxiety which do so much mischief. Cold when thus administered has no perceptible injurious effects on the organic actions, indeed indirectly is useful to them, by quieting the nervous excitement which contributed to their further exhaustion.

3d. Should the above measures fail in arresting the course of cholera maligna, (which is very rarely the case,) the second or collapsed stage is witnessed, and very frequently, it is in this state, that patients are originally presented to the practitioner, either from neglect of early symptoms, or from the virulence of the disease.

As formerly shown, the state of the system and organs is similar to that in the first stage, but all the essential peculiarities of the disease are aggravated, particularly the torpor of organic life, and the morbid irritability of the nervous system. Hence the indications are precisely the same, but their fulfilment becomes exceedingly difficult, sometimes impossible.

The congestion and consequent oppression are greater, but the circulation is now so depressed, that blood can no longer be detracted in any quantity from the vessels of the extremities, or if a small quantity be procured, reaction does not follow, and sedation is increased. Venesection should therefore be abandoned in decided collapse. Some advantage is occasionally gained by the use of cups or leeches over the vital viscera, but they also detract but little blood, and seldom fulfil the requisite indications.

Hence, our reliance must be placed on the *direct* mode of facilitating reaction by the judicious use of suitable stimulants, internally and externally. The attempt to fulfil this indication was attended with much difficulty from the peculiar morbid condition of the nervous system. External heat for example, so useful and grateful in ordinary cases of prostration, was here *intolerable*, notwithstanding the coldness and lividity of the surface, and the stagnant condition of the cutaneous circulation. Even the common covering with blankets was unpleasant, and all applications of hot bricks, sand, oats, of alcoholic, or other vapours, created great distress to the sensations of the patient, and hence aggravated his restlessness, increased the coldness and lividity of the surface, and the effusions from the skin, and hastened the fatal progress of the disease. Frequently also sinapisms could not be tolerated, or indeed any powerful rubefacient.

Similar difficulties, although not to the same extent existed as to the internal exhibition of stimuli, particularly as regarded alcoholic preparations: these could seldom be administered. Even the drunkard no longer hankered for his accustomed potation, and in all cases, spirits seemed to be unpleasant, if not injurious. Hence the rule adopted at the Penn street Hospital was *to stimulate the organic actions as freely as possible, without disturbing the sensations of the patient, or in any way aggravating the nervous irritation.* Fortunately this rule could be acted on, and yet powerful stimuli be administered externally and internally.

Externally.—Simple frictions long-continued with the hand, flesh-brush, or coarse cloths, were very important in relieving the torpor of the vessels. They became still more valuable when made with liniments or ointments, rendered stimulating by means of the aq. ammoniæ, the oil of turpentine, the tincture of capsicum, &c. Occasionally sinapisms, especially if lowered by means of flour, would be tolerated, at least for a short time, and then could be removed to another portion of the skin, (*"Emplastrum volans,"*) and very generally blisters, were borne without complaint. They were then very beneficial in relieving congestion and exciting capillary actions. A

large plaster of cantharides was usually applied over the epigastric and sternum whenever the symptoms became serious, and frequently additional plasters to the extremities. If vesication were excited, stimulating ointments were used for the dressings.

Internally.—The stimulants best tolerated and apparently most efficacious, were the vegetable spices, especially cloves, ginger, and capsicum. The various preparations of æther, and of ammonia, also the oil of turpentine, were often advantageous; but of this class of remedies, nothing seemed to equal the capsicum, as well in its power of exciting capillary action, as in the little offence it gave the sensations of the patient. It could be freely administered. I adopted the following formula, which some eighty years since was recommended by Dr. Steuart, of London, for cynanche maligna:—Take three table-spoonfuls of common Cayenne pepper, and two tea-spoonfuls of fine salt; beat them into a paste; pour half a pint of boiling water on the paste, and strain when cold; add an equal quantity of strong vinegar. One table-spoonful was not unfrequently administered every half hour, for several hours in succession, and often with great apparent advantage. Camphor, opium, æther, and other narcotic stimuli were occasionally important, but should be given in small doses, and not too frequently repeated, as otherwise they would induce stupor, and perhaps aggravate the congestion, especially if reäction did not ensue.

But notwithstanding the importance and efficacy of these remedies, the main dependence, in most instances, should be placed on *mercury*, for reasons already advanced. If by the above-mentioned stimuli, the susceptibility of the tissues could be aroused, and life be thus protracted until a mercurial influence should be established, an evident and often a permanent effect will be induced. The capillary actions and secretions return, first internally, as indicated by the vomiting and purging of bilious matters, and by the discharge of urine; and then externally, as indicated by the pulse becoming gradually developed at the wrist, by diminution of the coldness and lividity of the surface, and increase of the cutaneous circulation. There is also a diminution or actual cessation of the effusions from the skin, stomach, and bowels. These favourable symptoms increase until the third, or recuperative stage of cholera be fully established, when of course a new and completely opposite condition of most of the tissues will ensue.

The manner in which mercury should be exhibited has been the subject of dispute, but in such critical circumstances, we should not incur the least risk of failing in an object involving the life of our patients, from timidity in the exhibition of approved medicines.

Hence I used mercury freely, internally and externally. Calomel was given in doses of gr. v. with gr. ij. of powdered capsicum every half hour or hour, until some sixty or eighty grains had been administered, or sometimes in doses of twenty grains every three or four hours, while blistered and ulcerated surfaces were dressed with the strong mercurial ointment, and frictions with this ointment combined with turpentine or capsicum, were made to the whole cutaneous surface.

Should any favourable indications appear, cathartics rendered more or less stimulating should be administered, to keep up the secretions now returning, and to carry off the excretions from the liver and mucous membrane which, remaining in the stomach or bowels, might oppress the powers of the system, or give rise to inflammation and its unpleasant consequences. Seidlitz powders, sulph. magnes. &c. were often given, as also the castor oil, oil of Croton, Warner's cordial, rhubarb, &c. I generally preferred a strong infusion of senna with ginger, as best fulfilling the required indications.

But while pursuing the above plan, attention should be paid to the removal of any additional cause of depression, particularly to that resulting from indigested food in the stomach and bowels. The best treatment is often unavailing when the stomach is thus oppressed by its contents, while all the symptoms of the disease are highly aggravated. Hence even in extreme cases of collapse, emetics are often of the greatest importance, and should be freely administered; hot brine, and also the mustard were frequently given; ipecac. and sulph. zinc. were much and advantageously employed. They had an effect, not only in relieving the oppression, but also in exciting the organic actions of the mucous membrane of the stomach and of other viscera.

For similar reasons cathartics were often to be given, even before secretions were restored, that the sources of depression from indigested food, fæces, &c. being removed, the system might more readily react.

When the spasms, which are generally moderate during this sinking state of the system, continue severe, partial relief may be afforded by powerful frictions, the use of the tourniquet, and the exhibition of antispasmodics, particularly the æther; but evacuations to relieve the congestion of the spinal marrow and brain are forbidden. The extreme sensibility of the surface, so intolerant of heat, is usually obviated by free exposure to the air, which relieves the restlessness and agitation arising from this cause, while the copious effusions from this tissue are moderated by the stimulating frictions and ointments already recommended, without offence to the sensations of the

patient. The ointments and frictions seem very advantageous in diminishing the effusions and the coldness of the surface, by exciting the capillaries and lessening evaporation. *Ice* appears to be alone capable of allaying the tormenting thirst, with all its attending anxieties, and hence should be constantly supplied to the exclusion of cold drinks, which oppress the stomach and induce vomiting.

Should our efforts prove, as they sometimes may, successful, reäction ensues in some of the forms indicated, presenting states of the system and the organs with which we are more familiar, but which nevertheless manifest some peculiarities arising out of the previous condition of the solids and fluids.

It was formerly remarked that the symptoms of the stage of reäction might be advantageously arranged under four general heads, demanding some important modifications of treatment.

1st. Healthy reäction.—The only attentions requisite in such cases are for the prevention of mischief, by a diet nutritious but easy of digestion; by suitable tonics to invigorate the digestive apparatus and the general system; by the occasional employment of simple enemata, or the mildest tonic laxatives, to maintain the peristaltic motions of the bowels; by the occasional use of a tepid or warm bath, with frictions and warm clothing, and by moderate exercise in the fresh air, to encourage a healthy action of the surface, and invigorate the general powers of the system.

2d. The second state of reäction noticed, is where, with the return of the natural secretions, there is a morbid excitement of the brain and nerves, greatly endangering the life of the patient. The symptoms being exceedingly analogous to those of mania a potu were to be managed on the same principles, by supporting the organic actions by nutritious food, condiments, tonics, and even stimulants, while the nervous excitement should be moderated by rest, seclusion and narcotics carefully administered. Cups or leeches, assisted by cold to the head, and revulsives to the body and extremities, were valuable in diminishing cerebral irritation and preventing congestion.

3d. The third variety of reäction, in which some important viscus became the subject of active congestion or inflammation, was very dangerous from two circumstances. First—the imperfect reäction of the general system, as the pulse usually remained very weak, and the extremities cold, and even shrivelled; and second, the active determination of blood to viscera already oppressed by a passive congestion. Hence active and passive congestion were conjoined, and the system was exhausted or oppressed, forbidding the employment

of active measures. The indications however were clear to unload the affected organs, and to diminish their organic excitement. The antiphlogistic course should be adopted as far as possible: general bleeding could very rarely be tolerated, but cups and leeches could be freely and frequently employed with great advantage. All stimulants should be abandoned, the diet should be very simple, and cathartics be freely exhibited, unless severe gastro-enteritic irritations exist. They are exceedingly useful, as evacuants and alteratives when bleeding is forbidden; particularly as so much congestion exists, and the secretions are so imperfectly restored; hence they should often be conjoined with mercury, unless the system be already under the influence of this mineral. Revulsives of every kind become very valuable as the sympathies are now reviving, to be applied not only to the still torpid extremities, but to the body, and especially over the affected organs. Much in this way may frequently be accomplished, although for reasons already stated, the engorgement could not always be obviated, especially in the old, infirm, and intemperate.

4th. The fourth series of phenomena characterizing the stage of reaction, were analogous to typhoid fever; no individual organ being the subject of such overwhelming congestion, but where the sedation of internal and external tissues was superseded by febrile irritation, generally with inflammation in some internal organ, and with some disposition to stupor. The treatment need not be specified being very similar to what is suitable in ordinary cases of typhus mitior.

From the pathological and therapeutical principles advocated, it would result, that the epidemic cause of cholera maligna is a sedative poison, causing a depression of the organic life, with some excitation of the cerebro-spinal system, differing therefore from the narcotic poisons, as opium, &c. which primarily excite the heart and arteries, and moderate nervous irritability. These narcotic stimuli might therefore be regarded as antidotes to cholera maligna, when not severe, or complicated with congestion, &c. Hence it may also be inferred, that the accessory causes of cholera epidemica impair vital power or action; some by a direct influence, as cold, profuse hæmorrhages, or other evacuations, anxiety, fear, &c.; others by an indirect operation, overwhelming vital actions, as indigestion from quantity or quality of the food, inordinate stimulation from food or drink, severe local irritation or inflammation. Finally, as a state of perfect health, where strength is greatest, and the functions are regularly executed, of course the blood equitably diffused to small and large

vessels, is best calculated to resist injurious causes, the prophylactic measures must be based on the principle of supporting this normal condition in opposition to the depressing influence of the epidemic poison, as well as to the ordinary sources of disease. All inordinate stimulation from food, drinks, caloric, exercise, &c. are to be carefully avoided, while the organic actions are judiciously sustained at their healthy standard, by means already indicated.

My object was to present a selection of cases illustrating and confirming the observations and reasoning of this paper, but these from the want of space must be deferred. The following summary, from the Cholera Hospital, No. 4, on the Delaware river, in Penn street, south of Pine street, may be of some value as connected with this essay, and with the history of the epidemic in Philadelphia. Dr. J. K. MITCHELL was appointed Physician-in-Chief, but in consequence of severe sickness resigned. The hospital was then committed to my charge, and I was ably assisted by Drs. SMILEY, USELMA CLARKE, MUSGRAVE, and EDWARD PEACE.

Admissions from the 4th of August to the 1st of September, with the results.

Whites - -	27	- -	Males	13	- -	Females	14
Coloured - -	9	- - -		3	- - - -		6
Deaths - -	10	- - -		5	- - - -		5
Recoveries -	26	- - -		11	- - - -		15
Intemperate -	18, of these 5 died.						
Temperate -	15, " 3 do.						
Unknown -	3, " 2 do.						

Total number, 36—Males, 16; Females, 20.

Ages.—Under 10 years, 2; from 10 to 20, 3; 20 to 30, 14; 30 to 40, 6; 40 to 50, 8; 50 to 60, 2; 70 to 80, 1.

The admissions from the 4th to the 7th of August, under the superintendence of Dr. J. K. Mitchell, were 9, (of these 8 were from the Arch street prison;) of whom 2 died, and 7 recovered. From the 8th of August to the 1st of September, 27 were admitted; of whom, 18 were in the first stage, and 9 in a state of collapse.* There were 19 recoveries and 8 deaths. Of those admitted in the first stage, all recovered; one only, J. Hines, passed into the second or collapsed stage three hours after admission, having been ill for forty-eight hours.

* None were regarded as collapsed unless the pulse was exceedingly weak or imperceptible, so that venesection could not be employed, and the surface cold, livid, with shrivelled fingers, &c.

Of the 10 cases of collapse, including J. Hines, 4 died in this stage.

1 in 12	hours after attack--	4½	after admission.
1 in 36	do.	10	do.
1 in 9½	do.	5½	do.
1 in 24	do.	7½	do.

Six revived from the state of collapse.

Two recovered—1 after active congestion of the brain, on the 17th day after attack—14th after admission: 1 after severe nervous (cerebral) irritation, on the 12th after attack, and 14th after admission.

Four died—1 from congestion of brain, on the 3d day after attack—on the 2d after admission: 1 from nervous irritation, (as in mania a potu,) on 7th day after attack—on 6th after admission: 2 from typhoid fever—one on the 5th after attack, and 2d after admission—1 on the 5th after attack, and 5th after admission.

[We have unhesitatingly given insertion to the preceding remarks on cholera, although we are entirely at variance with the author, not only as regards most of his theoretical views and practical precepts, but also as respects some of his fundamental propositions and assumed facts. The substance of the antecedent memoir was read to the medical society of this city at their late session; and at the request of a number of the members, we were induced to lay before the society the very different views which our reading, reflexions, and personal experience have lead us to entertain. We propose, should there be space, to insert in our next No. the paper read on the occasion referred to, when the reader will form his own judgment. In the mean time, we will refer to our review of several works on cholera in the November No. of this Journal; to the statistics of cholera in the same No. p. 240; to our remarks on the pathology of cholera in the fifteenth and sixteenth Nos. of the Cholera Gazette; to the review of Cruveilhier on cholera in the present No. and to the valuable memoir of our collaborator, Dr. Jackson, in the two preceding Nos. for many facts, which, in our eyes at least, militate entirely against the doctrines of Dr. Hodge.]—Editor.

REVIEWS.

ART. XII. *Tablas Necrologicas del Colera-Morbus en la Ciudad de la Habana y sus Arrabales Formadas a escitacion del Escmo. Senor Intendente de Ejercito Conde di Villanueva.* Por DON RAMON DE LA SAGRA. Habana, 1833.

OF the very many places which have been visited by the spasmodic cholera, since the appearance of that disease in America, there are few which have suffered in so dreadful a manner—where the pestilence has carried off so large a portion of the population in so short a space of time—as the Havana. To those who are acquainted with the topography of the place, with the nature of its localities and climate, this excessive mortality cannot be a matter of astonishment. They are well aware that the Havana is a seaport town, containing the sources of impure exhalations, so uniformly encountered in situations of the sort—that it is built in a manner little suited to correct the effects of those effluvia, and inhabited by a people, the lower portions of whom are far from holding cleanliness in the light of a virtue—that it contains a large population concentered within a narrow compass—that a considerable portion of that population consists of slaves subjected to great hardships and privations, and of free people of colour, who, like the same class in other parts of the world, are probably negligent of hygienic measures; intemperate in their mode of living; possess other habits of a nature calculated to render them more prone to the disease, and to increase the virulence of its attack, and destitute of the means requisite for commanding efficient professional aid; and finally, that it is subjected to the sanitary regulations of a government and medical corporation, entertaining opinions relative to the mode of propagation of the malady likely to lead to the adoption of measures totally inadequate to arrest or mitigate the progress of the evil. So far indeed were those aware of the above circumstances from being astonished, that by many with whom we conversed or corresponded, it was anticipated, last autumn, that the cholera would not be long before making its appearance in that city, and that when it did so, its ravages would be considerable. The result has unfortunately but too well shown that they were not deceived in their calculations.

The work before us is, we believe, the first that has appeared on the subject of the effects of the disease at the Havana. As its title sufficiently indicates, the researches of the author, Don Ramon de la Sagra, were undertaken at the suggestion of the Intendent. Hence the statements contained in it may be regarded as official, and entitled to confidence. From these circumstances, as well as from the interesting nature of the results recorded in this work, and the statistical information it contains, we have been induced to prepare and present to our readers a brief abstract of its contents.

The author's account of the mortality from cholera is not founded on the reports of the cemetaries. These reports, he discovered, indicated only the absolute number of burials, and afforded in consequence but a very imperfect basis for a classification of the dead according to colour, age, sex, &c. For this reason he had recourse to the parochial reports and documents, and obtained from them a great part of the information he required for the above purpose. But besides examining these documents, in the parish churches, both within and without the walls, Don Ramon procured and made use of the reports of admission in, and discharges from, the military and civil wards of the Royal Hospitals, of the temporary establishments for the poor, of the Royal Arsenal, and of the *Campo de Marto*. It is on this extensive set of documents, that his calculations are based. The result of these he has presented in the form of tables, containing statements of the daily mortality from cholera in the city generally, from the commencement to near the termination of the disease; of the number of deaths in each parish separately, as well as of that in each class of individuals, in each sex, at each period of life, &c.

It is very much to be regretted, that the author has not stated the amount of population of those parts of the district of the Havana, of the mortality of which, from cholera, he treats in the volume before us. Such a statement ought, in all publications of the kind, to be carefully made, and in this instance should not assuredly have been neglected, as it would have afforded the reader the means of making many comparisons and calculations, which the author has neglected to notice. He refers, it is true, on that head, to the census of 1828, which, it would appear, he himself drew up, as well as to his statistical work on Cuba—*Historia Economico-Politica y Estadistica de la Isla de Cuba*. But on referring to the latter, we find only the reports for 1792, 1817, and 1827. In the two first, the population of the Havana and its suburbs is stated separately, but in the last it is combined with that of the surrounding rural districts, and therefore cannot be ascertained satisfactorily. In the second volume of the Bulletin

of the Statistical Society of Paris, we find that the population of the city and suburbs of the Havana amounted in 1827 to 70,595—32,355 whites, and 38,243 coloured people; and that in 1830, it amounted to 112,023, of whom 64,621 were white, and 47,402 coloured, (23,562 free, and 23,840 slaves.) On examination, however, it was found, that neither the first nor the second of these estimates, which was furnished by Sr. De Sagra, (and which it is astonishing he did not make use of in the present work,) could have formed the basis of his calculations relative to the rates of mortality in the different classes of the population. The one is too small, the other too large. Hence we are left in the dark on that subject, and must content ourselves with the comparisons and calculations we find in the work before us. But be that population what it may, it results, from the researches of Sr. De Sagra, consigned in his large statistical work, that the average mortality in the Havana during the five years, 1825–29, amounted to 3113.4 annually; 1852.6 among the coloured people, and 1260.8 among the whites. From the present work, we learn that in the same period, the average relative mortality among the white and coloured population in the different parishes of which the city is composed, was—

In the Parish of the	*Catedral* - -	34½	whites to	65½	coloured.
"	Santo Angel -	38½	"	61½	"
"	Espiritu Santo	32½	"	67½	"
"	San Cristo -	31½	"	68½	"
"	Nuestra Sra. de Guadalupe	47½	"	52½	"
"	Jesus Maria -	40	"	60	"

The relative proportion among the sexes in those two classes of individuals was, among the whites, 55 males to 45 females; and among the coloured people, 51 males to 49 females. If we have regard to the various classes of the coloured population, we find that the proportion in every 100 deaths was—

42	males to	58	females	among free mulattoes.
46	"	54	"	slave "
45	"	55	"	free negroes.
60	"	40	"	slave "

We have entered into these details in order to have some points of comparison in our subsequent remarks, and to be able to show the modifications occasioned in the rates of mortality by the cholera. The disease made its first appearance on the 26th of February, in the parish of Nuestra Sra de Guadalupe, which is situated on the outside of the walls, and contains a large number of narrow and filthy streets,

inhabited by the lowest orders of the population. The deaths on that day amounted to five, three among male whites, one among the free male mulattoes, and one among the female slave negroes. From that day to the 20th of April, the epidemic prevailed with more or less intensity, and gave rise in that short space to a mortality of not less than 8,253. Of this number, Don Ramon de Sagra was able to ascertain the colour, condition, age and sex of 7,435. The balance, 818, is accounted for by 114 deaths, which occurred in the barracks, forts, and the floating hospital of the navy, and of which no registers were kept in the parishes and hospitals, as well as by 704 interments of which no details could be obtained.

From the 26th of February, the number of deaths increased till the 27th of March, when it attained its maximum,—380. From that date the disease gradually decreased until the 20th of April, when the number of deaths did not exceed 12, and the epidemic was considered to have ceased. The diminution of the mortality took place less rapidly than the increase; for on the 10th day of the epidemic, the number of burials exceeded 100; while on the 7th of April, or thirteen days before the termination of the reports, it was reduced to 60, and the disease had not disappeared at the end of that period. If, however, we take the whole number of days, from the commencement to the cessation of the reports, fifty-four, we shall find that a greater interval elapsed between the first cases and the period of maximum of the mortality, than between that period and the cessation of the epidemic. Be this, however, as it may, it will be found by examining the tables from which the above facts are derived, that from the 7th to the 18th of March, the average mortality exceeded 150; the extremes being 192, (17th,) and 55, (8th.) From the 18th to the 21st, the average was 265, the numbers varying from 380, (27th,) to 248, (18th.) From the 21st to the 20th, it amounted to 343, the numbers varying from 380 to 306. From that day to the 6th of April, the average mortality was reduced to 161; the extreme numbers being 293, (29th,) and 89, (4th April.)

The mortality among the whites did not amount to one-half of that among the coloured population; for of 7435 cases, of whom a detailed account was obtained by the author, 2365 were whites, and 5070 coloured. Nor were the deaths equally distributed among the sexes; for of the amount just stated there were 3954 males, and 3480 females. Indeed, as to the former there must probably be added, the greater number of deaths occurring in the barracks, forts and floating hospital of the navy, as well as of the unregistered cases, it results that the excess of mortality among males was really greater than

is indicated by the above statement. But while such was the relative mortality among the sexes taken in the aggregate, without reference to colour, the proportion of deaths was not the same among the males and females of the white and coloured population taken separately, or even among each class of each colour. The following table will show the number of deaths among the males and females of those different classes in the 7435 individuals above mentioned:—

Whites.	Males.	Females.
American	760	881
Spaniards	414	51
Foreigners	32	11
Undetermined	130	86
Coloured.		
Free Creole negroes	438	632
Slave do. do.	219	258
Free African do.	492	521
Slave do. do.	980	590
Free Creole mulattoes	208	301
Slave do. do.	12	22
Undetermined	270	127

From these statements of the number of deaths from cholera, it results according to Sr. De Sagra, that the mortality, from that cause alone, amounted in the short space of fifty-four days, to about 8 per cent. of the whole number of the inhabitants. It will be found, however, from what we have stated relatively to the mortality in each class of individuals, and in each sex, that the proportion of deaths among them differed considerably. The following table, which we transcribe from the work under review, will establish this fact in a satisfactory manner:—

White males	5 per cent.
White females	4 "
Free male mulattoes	6 "
Free female do.	7 "
Slave male do.	6 "
Slave female do.	7 "
Free Creole negroes	10 "
Free Creole female negroes	11 "
Slave Creole male negroes	7 "
Slave Creole female negroes	6½ "
African free negroes	19 "
African free female negroes	17 "
Slave African negroes	10½ "
Slave African female negroes	8½ "

From this statement it will be found, that the largest mortality occurred among the free African negroes of the two sexes; that next to them the free Creole negroes, males and females, suffered in the highest degree; while the smallest mortality occurred among the whites and mulattoes.

By comparing the population of that part of the city which is situated within the walls, and that of the out parishes, to the mortality in each of those districts, Sr. De Sagra found, that the proportion of deaths in the various classes of inhabitants presented some difference:—

	Intra Muros. Per cent.	Extra Muros. Per cent.
Whites	4	6
Free mulattoes	9	7
Slave do.	3	16
Free negroes	17	12
Slave do.	8	12½

The extent of the mortality differed considerably in the different parishes. Of the 7435 deaths, of which, as we have already mentioned, an account was obtained by the author, the number in each parish was as follows:—

	Males.	Females.	Total.
La Catedral	228	140	368
El Espiritu Santo	275	479	754
El Santo Cristo	198	228	426
El Santo Angel	134	202	336
Jesus Maria	507	689	1196
Nuestra Sra de Guadelupe	1322	1196	2518
Nuestra Sra del Pilar, Jesus del Monte y el Cerro	568	362	930
Hospitals	723	184	907
Total	3955	3480	7435

It is proper to remark, that the three first of those parishes are inhabited by the genteel and wealthy classes of society; that they, as well as the fourth, are situated within the walls of the city; while the others are located on the outside. The relative proportion of deaths among the white and coloured parts of the population of some of those parishes was greatly modified by the disease, as will be found by comparing the results obtained in ordinary seasons, to the following statement of the proportion during the epidemic.

Catedral - - - - - -	31 whites to	69	coloured.	
Santo Angel - - - - -	29 "	71	"	
Espiritu Santo - - - - -	28½ "	71½	"	
Santo Cristo - - - - -	27 "	73	"	
Nuestra Sra de Guadalupe - -	34½ "	65½	"	
Jesus Maria - - - - -	27 "	73	"	

As regards the relative mortality of the sexes in each class during the prevalence of the epidemic, it will be found, when compared to that noticed in ordinary years, to have been somewhat modified among the white, but not at all among the coloured population. Thus, instead of 55 males to 45 females in every 100 deaths among the former, the proportion was changed to 59 males to 41 females; while among the people of colour, the proportion remained the same as in ordinary seasons—51 males to 49 females. This similarity in the proportion, however, will only hold, if we have regard to the mortality among the males and females of the coloured population considered in the aggregate; for if we examine the mortality in the various classes of which that population is composed, the uniformity no longer will be found to exist. Thus instead of the proportions which we have stated to occur in each class, during ordinary seasons, it was discovered that in every 100 deaths, there were—

48	males to	52	females	among free mulattoes.
49½	"	50½	"	slave "
44	"	56	"	free negroes.
54	"	46	"	slave "

From an examination of these proportions, and a comparison of them with those obtained during ordinary seasons, it results, that the ravages of the epidemic was greater among female than male mulattoes, as well as among male than female negroes, both in a free and slave condition. In ordinary seasons also these occur, in every 100 deaths, 41 among the whites to 59 among people of colour. During the cholera the proportion was changed to 30 among the whites, to 70 among people of colour. In other words, the mortality among the whites decreased at the rate of 11 per cent, while that among the coloured population increased in the same ratio. The author remarks, that by comparing the ordinary average daily mortality of the Havana, to the average daily number of deaths during the prevalence of the epidemic, it will be seen that in general the former amounts to about 10, while during the latter period it rose to 153; consequently, that in the short space of fifty-four days, there perished in the Havana and its suburbs, as many individuals as usually die in the same place in the course of twenty-six months.

The following table will show the proportion of the mortality among individuals of various periods of life, and in each class of the population.

Periods.	Whites.		Free Mulat.		Slave Mulat.		Free Negroes.		Slave Negroes.		Totals.		General Total.
	Male.	Fem.	Male.	Fem.	Male.	Fem.	Male.	Fem.	Male.	Fem.	Male.	Fem.	
From birth to 7	307	257	60	51	7	9	139	137	93	91	606	545	1151
7 to 10	42	34	17	9	1	1	20	29	15	17	95	90	185
10 to 15	36	42	8	16	1	1	34	28	35	39	114	126	240
15 to 20	36	49	16	19	6	2	27	41	67	67	152	178	330
20 to 30	184	114	28	50	3	3	103	174	237	190	555	531	1086
30 to 40	145	110	18	52	2	6	95	163	140	121	400	452	852
40 to 50	161	85	12	34	1	1	90	154	73	58	337	332	669
50 to 60	101	87	16	16			72	108	46	25	235	236	471
60 to 70	68	53	4	16			29	77	16	10	117	156	273
70 to 80	19	37	4	6			19	32	9	7	51	82	133
80 to 90	13	19	2	2			4	13	1		20	34	54
Undetermined	338	142	40	40	9	12	351	240	649	284	1387	718	2105
Omissions -													704
Total - -	1450	1029	225	311	30	35	983	1196	1381	909	4609	3480	8253

By comparing the number of individuals who die at various periods of life in ordinary times, to that of persons who were carried off, at corresponding periods, during the prevalence of the epidemic, it will be found, that among the whites the mortality was greater during the cholera in persons between 20 and 60, and smaller in children and infants; although at that time the measles prevailed extensively among children. Among the coloured population, the number of deaths during the epidemic was more considerable in individuals between thirty and forty, and less so at other periods of life than is found to be the case at other times. This smaller proportion of deaths was particularly observable in infants and old people, among both of which classes the mortality was very small.

In ordinary seasons, the proportion of deaths in the two classes of the population—white and coloured, from birth to the tenth year, is found to be—

	White.	Coloured.
From birth to 1 year -	66 per cent. -	61 per cent.
1 3 -	21 " -	19 "
3 10 -	13 " -	17 "

But during the epidemic, the proportion in corresponding periods, was—

	White.	Coloured.
From birth to 1 year -	32 per cent. -	27 per cent.
1 3 -	29 " -	30 "
3 10 -	39 " -	43 "

This fact, as the author very justly remarks, confirms the observation already made, that children and infants are much less prone to the disease than adults.

Sr. De Sagra was not able to collect information relative to the professions and trades of the individuals carried off by the disease—to their modes of life, habits, dwellings, &c. Yet, from the documents he had the opportunity of consulting, he thinks, he can conclude, that the most vicious were not more prone than others to the disease; and that the pestilence was particularly destructive among individuals exposed to the greatest privations. The wealthy portions of the city presented the smallest mortality; while, on the contrary, the largest number of deaths occurred in the most populated districts. In order to compare the mortality in the various parishes, it is necessary to be apprised of the circumstance, that of the great number of deaths among coloured people, which occurred in the parish *Del Cerro*, more than one-half proceeded from the depositories of runaway negroes, and other establishments situated within its jurisdiction.

The author of the work of whose contents we have thus offered a brief analysis, is not a member of the medical profession. Hence he has abstained from entering on a variety of subjects, which would have proved interesting to his medical readers, but most of which, as experience has served to convince us, physicians alone can with propriety undertake to elucidate; as, for example, the history of the disease, its origin, mode of propagation, character, as well as the textural alterations revealed on dissection, the most beneficial modes of treatment, and the proportion of deaths to the sick. It is to be hoped, that some experienced and intelligent practitioner will, ere long, furnish to the medical public the desired details on each of these points. La R.

ART. XIII. *Anatomie Pathologique du Corps Humain, ou Descriptions, avec Figures Lithographiées et Coloriées, des Diverses alterations Morbides dont le Corps Humain est susceptible.* Par J. CRUVEILHIER, Professor d'Anatomie, a la Faculté de Médecine de Paris; Médecin de la Maison Royale de Santé; Chevalier de la Légion d'Honneur; Membre de la Académie Royale de Médecine; Président perpétuel de la Société Anatomique, &c. Quatorzième Livraison, et 14, liv. bis. *Maladies de l'estomac et des Intestins.* (CHOLERA MORBUS.) pp. 52, folio. Plates 5.

THE appearance of the fourteenth Livraison of the magnificent work of M. CRUVEILHIER* affords us an opportunity we have long desired, of presenting to our readers an account of the researches of the anatomico-pathological school relative to cholera. Though far from subscribing to the peculiar doctrines of that school, we attach a high value to the labours of its disciples. They are perhaps unrivalled in the minuteness and care with which they conduct post mortem examinations; and the observations which they are now industriously collecting, will constitute the most precious materials for the construction, by others, of an enduring system of medical doctrine. It is not by them, however, that such a system can be erected; the foundation upon which they are attempting to raise their superstructure is unsound. They have attempted to introduce into pathology the mode of classification adopted in natural history, and seem to think that they will thus invest the one with the precision and certainty of the other. The characters presented by morbid structures offering the only foundation for such a classification; they have endeavoured to arrange diseases according to the alterations found in the structures after death. Their pathology is founded directly upon anatomy, and the morbid lesions discovered on post mortem examination have thus assumed a predominant importance. But these lesions are not the disease, they are merely the results of disease—they are the products of derangement of the functions, and it is this derangement of function which constitutes disease, and against which our remedies are to be primarily directed. Hence it is upon physiology that pathology must be immediately based, and morbid anatomy cannot be correctly studied except through the medium of physiology.

From their mode of viewing disease, it has become a fudamental

* This work was commenced upwards of five years since, but after reaching the eleventh No. its publication was stopped. It has recently been recommenced, and we trust will be continued uninterruptedly to its completion.

maxim of the school just alluded to, that every organic alteration not constantly *observed* after a disease, cannot be considered as an essential part of that disease. Now while we are disposed to admit, that no derangement of function can exist without some change of structure; it is a fact which cannot be disputed, that this alteration may be sufficient to occasion death, and yet our most careful investigations fail to detect it on post mortem examination. Such cases, and they are numerous, though their number has been exceedingly reduced by the modern improved methods of examination, can never enter into the system of the pathological anatomists. But what is worse is, that with them the exception makes the rule. Thus, in any disease, although in ninety-nine cases out of a hundred, a certain organ is always found diseased, yet if in the hundreth, no lesion of it is discovered after death, it is at once adopted as a rule, that derangement of that organ is not essential to the disease; and this, although the functions of the organ may have been manifestly disordered during life, and no lesion be discoverable in any other organ to account for death.

We will not at present dwell further on this subject; but these few remarks seem necessary, both because the doctrines of the anatomico-pathological school are not well understood in this country, and still more because an adoption of them would be a complete bar to any correct general conclusions relative to the pathology of cholera.

It is only necessary further to remark that M. Cruveilhier is a member of the anatomico-pathological school. He appears however to be awakening to the errors of that school, and he unquestionably may be ranked among the most distinguished pathologists of the day. His great work of which the fourteenth number is now before us, stands unrivalled in the beauty and accuracy of its illustrations. This number is devoted to the consideration of cholera morbus, and contains five folio plates representing the appearances exhibited by the stomach and intestines of those who die of that disease.

To arrive at a correct knowledge of the nature of cholera, it is not sufficient to study the most severe cases—those which prove fatal in a few hours. From such cases little comparatively is to be learned. To obtain a full and correct view of the disease, it is necessary to investigate, 1st, the epidemic influence in its mildest effects, and when not productive of cholera; and next, the disease in its various grades. This M. Cruveilhier has done. He commences his work with some general considerations relative to cholera morbus, and then treats in succession of the pathological anatomy, the pathological physiology, and the therapeutics of the disease. His general considerations embrace four heads, 1st, the epidemic influence in its mildest

effects, and not productive of cholera; 2d, choleric diarrhœa; 3d, mild cholera, *(cholera moyen,)* 4th, violent cholera, *(cholera très grave,)* with or without asphyxia.

That so few persons in Paris entirely escaped the epidemic influence, is attributable in part M. C. thinks to circumstances foreign to the medical constitution. The anxiety and fear, kept up by the perusal of the daily papers; the multiplied, frequently absurd and often injurious precautions taken to protect from the disease; the preventive remedies devised by charlatinism and adopted by credulity; the exclusively heating diet recommended officially, and rigidly employed by those even who had for years been accustomed to an opposite diet, all he thinks favoured the extension of the disease. Another circumstance which did not a little contribute to the same result, was the popular instructions for the treatment of cholera generally distributed, so that every family was provided with drugs, and thought themselves competent to apply the remedies at the onset of the disease.

"I cannot" says M. C. "relate here all the cases, in which on the slightest uneasiness, on the occurrence of a spasm often caused by fright, the whole family in alarm, surrounded the supposed patient with bags of hot sand, overwhelmed him with blankets, and excited excessive sweats by the vapour produced by pouring vinegar upon hot bricks; whilst at the same time peppermint, ammonia, simple or camphorated ether, or laudanum were administered internally, with the temerity of ignorance, so that when the physician was called, he experienced some difficulty at first in distinguishing this factitious from a real disease. The cessation of these incendiary measures did not always suffice to dissipate their effects."

The epidemic influence aided by the various other influences, to which allusion has been made, manifests itself by different phenomena, according to M. Cruveilhier. Sometimes by nervous symptoms, as vertigo, lassitude, cramps, &c.; sometimes by a *febrile paroxysm* of twenty-four or forty-eight hours duration, &c. The occurrence of preternatural vascular action at the commencement of an attack of cholera, has also been observed by Greenhow* in some cases, and we have ourselves met with it in one or two instances. M. Cruveilhier agrees with the most careful and accurate observers, that it is the digestive functions which most frequently manifest disorder. Epigastric uneasiness, spasms of the pharynx or œsophagus, anorexia, vomiting, bilious diarrhœas, nausea, borborygmy and colics were never more common than during the prevalence of the epidemic. Great irritability of the gastro-intestinal mucous membrane was manifested

* Cholera as it recently appeared in Newcastle and Gateshead, p. 13.

by the violent action of the mildest purgatives, and the difficulty in curing many cases of gastritis and enteritis, apparently slight; and also their tendency to return on the slightest imprudence in diet.

"Obliged to give, at the hospital *à la Maternité,*" says M. C., "purgatives in certain puerperal diseases, I found half an ounce of the mildest castor oil produce superpurgation." p. 3.

In some cases the epidemic influence was exerted principally upon the stomach, inducing *irritation* of that organ. This was manifested, according to M. C., by a sensation of heat, with increase of sensibility or simply uneasiness at the epigastrium, increased on inhalation, so that the patient could not draw a full breath. This was attended with heat and pain, or uneasiness along the œsophagus and pharynx; thirst, with desire for acid and cold drinks. The smallest quantity of liquid taken into the stomach, produced a sensation, as if lead had been swallowed; at the same time there was constipation, nausea, efforts to vomit, &c. General bleeding, leeches to the epigastrium, baths, abstinence from drinks, iced seltzer water, or small portions of ice *alone*, succeeded best in relieving these symptoms. M. C. notices another and more intense form of this gastric irritation, and which he describes as manifested by constant anguish, of which the epigastrium was the centre, and which sometimes extended the whole length of the œsophagus, and at others around the base of the thorax; with vomiting, excited by the slightest motion, or by the ingestion of the smallest quantity of drink.

In other cases the small intestines were principally affected by the epidemic influence. The symptoms here, were colicky pains at the umbilical and hypogastric regions, of more or less intensity, and either continued or intermittent; sometimes disgust for food, constipation, in some cases febrile action at night, &c. When these symptoms were not arrested, the irritation extended to the stomach and large intestines, and proved fatal. On post mortem examination, the gastro-intestinal mucous membrane was found extensively reddened.

In a third class of cases the epidemic influence was particularly directed to the large intestines, and manifested itself by bilious diarrhœa, and was in general more readily cured than the preceding.

"In an immense majority of these cases," says M. C., "diet, rice-water, baths, sedative enemata, sedative potions and leeches to the anus effected a cure." p. 4.

"Finally," he adds, "many individuals previously affected with the grades of irritation known by the name of chronic gastritis and enteritis, have suffered from an aggravation of the symptoms, which must be attributed, in great part, to the alterations in their diet."

M. Cruveilhier justly maintains that no diarrhœa should be considered as choleric, unless it is liquid, nearly inodorous, and resembling turbid whey, or rice-water with some grains floating in it. The choleric stools are, however, always preceded by discharges of fecal or imperfectly digested matters. M. C. does not consider the complete absence of the colouring matter of bile as essential to characterize the choleric stools, it is sufficient that they are watery and flocculent. In some cases he asserts, that the secretion of bile appears as much augmented as the intestinal secretion. The excessive abundance of the choleric stools, in many cases, are noticed by M. C., and he states that they are sometimes *attended* with *griping* and *colic.* (p. 4.) He considers opium as a specific in the treatment of these cases; and states that he has met with very few choleric diarrhœas which have resisted this remedy when properly administered. He prescribes it, 1st, in the form of enema, ten or twelve drops in a little starch repeated every two or three hours; 2d, a potion, consisting of cinnamon water, mint water, orange-flower water, syrup of ether, of each half an ounce; laudanum, twenty-five drops, a spoonful every hour; 3d, for drink, rice-water with gum Arabic, in small quantity, or the white decoction without cinnamon.

The *temperature* of the enemata and drinks, M. C. considers as a fundamental point in the treatment, and he states that cool or even cold drinks and enemata have been attended with a success, which has often astonished him. In our number for November last, p. 172, we were led by our pathological views of the disease to recommend cold enemata, and we are happy to have their utility confirmed by the experience of so careful an observer as M. Cruveilhier. He states that he was led to their employment by chance. In a case of sporadic cholera, in which opium had failed, the patient having experienced a sensation of burning, whenever a warm enema was given him, took one of cold water, and the diarrhœa was instantly checked. M. C. states that he is also indebted to chance for a knowledge of the efficacy of very warm enemata. One of his patients, who was affected with a marked choleric diarrhœa, took an enema which produced a sensation of burning, followed by a complete cessation of the diarrhœa.

"With the opium and cold enemata may be associated," says M. C., "in a great many cases, leeches to the anus or over the course of the colon, as employed by M. Broussais, emollient baths, emollient cataplasms, and sometimes abstinence from all drinks."

M. C. employs general blood-letting only when particularly indications demand it.

Choleric diarrhœa may become chronic and degenerate into ente-

ritis, or it may change into cholera. The first is to be treated by the ordinary remedies for diarrhœa and enteritis, as leeches, emollient baths, opiate draughts and enemata, cold enemata, sinapisms to the lower extremities, and sometimes to the abdomen, rigid diet, the white decoction without cinnamon, as the sole article of drink and food.

M. C. is of opinion, that there are three forms of choleric diarrhœa; one which will not degenerate into cholera, another which is only the precursor of cholera, and which runs into it in spite of every remedy; and a third, which may be readily cured, but degenerates into cholera by errors of diet, or when neglected. The two first M. C. admits to be very rare, and only exceptions to the rule; and he says that when a choleric diarrhœa has been cured, we may in general flatter ourselves that we have prevented an attack of cholera. He further adds, that he has never seen a case of choleric diarrhœa properly treated from the commencement, which had degenerated into cholera.

Between the most severe cases of cholera, those which tend directly to destroy life, and choleric diarrhœa, many cases of intermediate severity occur, which M. C. describes under the term of mild cholera, *(cholera moyen.)* Of this class of cases, some have a tendency to get well under a rational and simple treatment, and others with an appearance of great mildness, are really extremely dangerous, and proceed to the extinction of life in spite of all the efforts of art. M. C. therefore, considers mild cholera as being sometimes a less severe form of violent cholera, and at others, as the first stage of the most violent form.

Mild cholera, he states, commences like every other grade of cholera, almost constantly by a more or less protracted, and more or less considerable choleric diarrhœa, which suddenly becomes aggravated from improper diet, &c. The change of choleric diarrhœa into cholera, is announced by vomiting, painful cramps of the extremities, violent thirst, epigastric distress, change of countenance, sunken eyes, feeble voice, disposition to coldness, sinking of the pulse; all symptoms indicative of the disease being no longer local, but that the nervous centres are simultaneously and deeply affected. These do not, however, all present themselves in every case; there is almost always a predominance of one or other of them; and several of them are frequently entirely absent.

Thirst, epigastric distress, alteration of the countenance, weakness of the pulse, feebleness of voice, suppression of urine, and a disposition to coldness, are the constant symptoms. Evacuations from the

bowels are, in some rare cases, wanting. M. C. states, and he considers their absence as a bad sign, justly remarking, that—

"It denotes not a suppression of the flux, but simply a want of excretion of the secreted fluids. It is easy indeed to verify the presence of fluid in the intestines, by pressing upon the abdomen, which produces a gurgling sound, similar to that from a partially filled barrel; or better by percussion of the abdomen, which yields a peculiar sound, indicating the excess of fluids over the gases. *There is often tenesmus, as in dysentery;* and bloody stools are not unfrequent." p. 11.

M. C. has also seen cholera insensibly replaced by dysentery, showing, he remarks, the affinity between the two diseases.

Vomiting, M. C. represents, as well as all other writers, as being sometimes the predominant symptom; he has rarely seen it entirely absent. It is not however very unfrequently absent, as might be shown by a host of evidence.

The suppression of urine, M. C. has found a constant phenomena. He considers it with the best pathologists, as resulting from the physiological law, by which the secretions mutually replace one another. Its reëstablishment is an unequivocally good sign. Cramps, M. C. states to be one of the least, and *epigastric distress the most constant* symptom of cholera.

Mild cholera when it does not run into cholera asphyxia, presents according to M. C. two marked periods, 1st, that of *concentration*, and 2d, that of reäction. The reäction may be incomplete or temporary, and may become fatal.

"The adynamic or typhoid state often, says Mr. C. replaces the choleric. The patients may also resist these consecutive phenomena; but some of them die, and on examination after death, *unequivocal signs of inflammation of the gastro-intestinal mucous membrane are found.* This adynamic or typhoid state which has destroyed so many patients supposed to be convalescent, has been common to all the forms and all degrees of cholera, from simple diarrhœa to algid cholera. It has been especially fatal to aged persons, to valetudinarians, and those who had previously laboured under chronic gastritis and enteritis. It has also appeared to me that a stimulating treatment too long continued, may after having appeared to resuscitate life, favour this termination." p. 13.

M. C. quotes several cases illustrative of this form of cholera, and of the treatment he pursued in it.

The most violent grade of cholera presents itself in two forms. In the first the patient is of a blue colour, as in cyanosis or in asphyxia from carbonic acid gas; in the second the patient does not exhibit that colour. The first form usually proves fatal in a very short time, and has been termed blue cholera, cholera asphyxia, and algid cholera. In the second form, which is not less violent, although it is not so ra-

pidly fatal, the countenance is as much changed, although not of a blue colour; and the contractions of the heart propel the blood to the extremities of the circulatory system. The chemical phenomena of respiration are also partially performed, and the coldness of the body is not algid. M. C. designates this form, by the name of very violent cholera without asphyxia.

It seems to be still doubted by writers, whether cholera is always preceded by what have been termed premonitory symptoms. Most of the writers, and especially those who have had the most extensive means of observation, and have investigated the subject most carefully, assert that it almost invariably is, and M. C. is of the same opinion. He states that "it is excessively rare for the most violent grade of cholera to commence without premonitory symptoms."

"I know," he adds, "that many persons have been seized with the most violent symptoms, whilst engaged in their ordinary occupations, on a journey, or during a walk; but in general the first symptoms come on at midnight or towards morning, after a quiet sleep; but on inquiry I have almost always ascertained that the invasion of the cholera had been preceded for several days by a more or less marked derangement of the digestive functions. It is important here to remark, that in proportion to the length of time that the premonitory symptoms have continued, even when slight, and especially where they have alternately increased and diminished, the more sudden and overwhelming will be the disease. It is perfectly intelligible, that a lesion which has been long preparing, must when it takes place produce more violent effects, than one which occurs suddenly without antecedents."

The symptoms of cholera asphyxia have been so frequently detailed, that it is not necessary here to notice M. Cruveilhier's account of them, especially as he has offered nothing new on the subject. There is one remark, however, respecting convalescence, which strikes us as just, and is worth repeating. M. C. states that he has never seen rapid convalescence from a very marked choleric state; but that all the patients he has seen have had a more or less troublesome recovery. He therefore thinks it probable, that the cases of algid cholera reported as rapidly cured, were really mild cases, which presented an appearance of violence from the presence of spasms.

Violent cholera without asphyxia, affects less immediately the principle of life, and is more in the power of therapeutic agents. Reäction so rare, at least in a decided degree, in cholera asphyxia, is in this form more or less completely established. In both forms however, M. C. considers reäction essential to recovery; but there are some forms of cholera so intense that reäction cannot be excited by any means. In this form of cholera, death occurs as frequently, though not as promptly as in cholera asphyxia.

M. C. next gives us a summary, of the appearances presented in the different organs, after death from cholera, but as we have dwelt upon this fully in a former number, and as M. Cruveilhier's observations are in accordance with what we have already given, we shall proceed at once to his analysis of the symptoms of the disease.

Cholera asphyxia he remarks, appears at first to be incapable of analysis; innervation, circulation, and respiration are simultaneously and profoundly affected; life is menaced at its source, as if the patient was under the influence of a deleterious agent: he presents all the symptoms of poisoning: he dies asphyxiated. But if in place of studying at once cholera in its most violent form, we view the disease in all its grades, if we pass successively from choleric diarrhœa to slight cholera, to moderate cholera, and finally to cholera asphyxia, we shall be insensibly led to establish the most probable source of the symptoms, and their connexion.

"Now the affinity which exists between choleric diarrhœa and cholera, is an incontestable fact; we have seen indeed, that if a certain number of persons be suddenly attacked with the most severe symptoms, cholera still more frequently commences by a choleric diarrhœa neglected, or badly treated."

We ought therefore to consider choleric diarrhœa as the first degree of cholera—as cholera in its least severe form. But the choleric diarrhœa is nothing else than an intestinal flux, a serous and mucous diarrhœa, which *is very analogous to that which results from superpurgation.* This diarrhœa which is accompanied so often by tenesmus and colics, brings on almost immediately, when it is very abundant, a considerable emaciation, a complete prostration of strength, weakness of the voice, tendency to coldness, and light cramps; all of which symptoms are too evidently a consequence of the sudden concentration of the vital forces upon the intestinal canal, and the loss of substance by alvine evacuations, for it to be necessary to establish their correlation.

In choleric diarrhœa, M. C. justly regards the disease as local, whilst in cholera the system participates in the lesion.

We have elsewhere maintained the analogy which exists between the symptoms of cholera and those produced by the acrid poisons, and we are happy to adduce the experience of M. Cruveilhier in our support. This analogy has been noticed by Morgagni, and almost every writer since his time, and emphatically pointed out by Christison in his valuable work on poisons. As the resemblance has, however, been denied by a writer in the present number of this Journal, (p. 412,) we shall quote M. Cruveilhier's own words.

"The study of the phenomena resulting from poisoning by arsenic, appears to me to throw the greatest light upon cholera; as soon as the poison has touched the gastro-intestinal mucous membrane, local symptoms appear, which denote a violent irritation of this membrane, and general symptoms, by which the severe blow which is carried to the vital forces is revealed; *for the local and general symptoms of poisoning have the greatest analogy to those of cholera;* in both cases, there are cramps, epigastric distress, oppression, hiccoughs, vomitings, extinction of the voice, smallness or cessation of the pulse, coldness of the surface of the body, sometimes carried even to icy coldness. Called to an individual who was suddenly taken with the symptoms I have just described, and who would make no confession, I informed the attorney of the king, that if the disease was not cholera, the patient had been poisoned; he died in my presence, about three hours after the attack of these symptoms. On opening the body, we found in the stomach fragments of arsenic.

"Observe also strangulated hernia: an inch of the circumference of the intestine is pinched; immediately appear hiccoughs, vomiting, depression of the pulse, extinction of voice, all the symptoms which denote a profound lesion of the nervous visceral system; and the patients sink under these nervous symptoms when the local lesion is very slight.

"The more I reflect, on the one hand, upon the succession of the phenomena in the greater number of cases of cholera, on the other, upon the effects of a rapid concentration of innervation, and of fluids upon a surface so sensitive and so vascular as the intestinal mucous membrane, the more I am justified in seeing in this concentration, in the serous and mucous diarrhœas which follow it, the most general fact that can be arrived at by the observation of the symptoms, and by pathological anatomy; and without pretending to explain by it all the symptoms, it will suffice us to establish a correlation between this diarrhœa and the incomplete and gradual asphyxia, the unquenchable thirst, the præcordial anxiety, the vomitings, the hiccoughs, the cramps, and in fine, the diminution of the beatings of the heart, whose contraction reduced to a simple quivering, no longer throws the blood into the large vessels. It appears to me impossible to point out the limit which separates the cases where the disease is purely local, and suits itself to the state of equilibrium of all the functions, from those where the equilibrium being destroyed drags with it all this train of formidable symptoms. It is sufficient for us to prove the fact of this rupture of the equilibrium of innervation, a rupture which we find in all severe diseases, and which ought to vary prodigiously according to individuality and a thousand other circumstances."

M. Cruveilhier seems not to have arrived at sufficiently clear or precise views, relative to the pathological condition of the gastro-intestinal mucous membrane in cholera. He states that pathological anatomy appears to him to have demonstrated that cholera morbus does not essentially consist in an inflammatory fluxion, or phlegmasia of the gastro-intestinal mucous membrane, unless, he adds, the sero-mucous fluid, which constitutes the choleric stools, be considered as sufficient to characterize inflammation in the absence of all colora-

tion and injection of the mucous membrane which he does not. Now, M. Cruveilhier himself, admits that there is a fluxion to the gastro-intestinal mucous membrane, and the absence in some cases, of all redness of that membrane is explained by the excessive secretion, the arteries being in a state of excessive action, pour out immediately by their exhalants, a portion of their blood, and force into the veins the remainder. M. Cruveilhier also admits, that the inflammation of the serous membranes may be adduced in support of this opinion, since inflammation is characterized in them by the presence of a product of sero-purulent secretion, without any coloration of these membranes; though he thinks that the analogy will not hold, in consequence of the difference of texture and vitality of the two tissues. But the existence of fibrine in the secretions from the intestinal mucous membrane in cholera, detected by Christie, Thompson, and O'Shaughnessy, an undoubted product of inflammatory action, is conclusive to our minds; and M. C. admits, that there is the greatest analogy between the fluxion to the intestines in cholera, and that which constitutes inflammation.

"Anatomy and pathological physiology," he states, "unite in demonstrating in a manner not less peremptory, the *great affinity* which exists between the mode of fluxion to the intestines, which results in the sero-mucous secretion of cholera, and the mode of fluxion which constitutes inflammation; so much so, that many individuals who die of cholera after reäction, exhibit unequivocal traces of inflammation. Cholera considered in an anatomico-pathological point of view, and with respect to the intestinal canal, *must then be arranged in the great class of irritations.*"

This, it appears to us, is admitting all that can be demanded, and all that we have ever contended for, viz. that in cholera, there is an active fluxion to the intestinal canal, in some cases causing excessive secretion, in others attended by ordinary inflammation.—(See the November No. of this Journal, p. 168.) M. Cruveilhier has overlooked the fact, that the blood-vessels of the gastro-intestinal mucous membrane perform two distinct functions; that one set of vessels are appropriated to secretion, and another to nutrition, and that it is these last which are concerned in inflammation. When the former set of vessels are in a state of excessive activity, they appropriate to themselves all the blood determined to the mucous membrane, pour out a portion of it into the intestines, and throw the rest into the veins, which last thus become engorged. But when the secretions are not so excessive as to prove a complete drain, the surplus blood is received by the nutritive vessels, and we have the phenomena of ordinary inflammation; further, when the secretions are wholly suppressed with-

out the afflux to the intestines being diminished, we have all the blood determined to the nutritive vessels, with the natural results—a violent gastro-enteritis.

The indications of treatment, acccording to the views of M. Cruveilhier, are to resuscitate life during the period of concentration; to direct the reäction, and to dissipate the fluxionary disorders which succeed the terrible struggle of the vital forces against the morbid cause.

Among the measures calculated to assist in inducing reäction, M. C. appears to consider frictions to the skin as useful. He says that at first they were abused; and subsequently, without sufficient reason, completely renounced. *Heat*, he remarks, was borne by patients with great impatience, that their skin remained icy cold in the midst of hot vapour; that when the heat was continued, the oppression and distress was aggravated; and that many practitioners therefore renounced them. In this city similar effects were observed to follow their use.

M. C. has not used ice externally, except to fulfil certain indications. He has found that when applied to the epigastrium, it sometimes arrests the vomiting and relieves the distress in that region; and that frictions with it upon parts affected with cramps, sometimes arrest that affection.

Every possible means of irritating the surface seems to have been tried, with little apparent advantage; M. C. thinks, however, that a strip of blister, the whole length of the spine, was somewhat useful. Baths of all kinds have failed to produce any marked benefit; M. C. however, is of opinion, that local vapour douches might be employed in some cases with advantage.

M. Cruveilhier thinks that moderate diffusible stimuli are useful. But, he remarks, that—

"All experience has proved, that if stimulants in small doses are useful in the period of concentration to revive life, when too long continued, or when given in too large doses, they may be injurious. We should never forget, in the administration of stimulants, that in cholera there is a fluxion to the mucous membrane, and that there is imminent danger of inflammation in the period of reäction."

The stimulant he recommends is the following:—℞. Cinnamon water, mint water, Syrup of ether, āā. ℥j.; Acetate of ammonia, ʒj. To be taken in spoonful doses.

Experience does not justify, M. C. states, the use of bark.

Opium, he says, so efficacious in choleric diarrhœa and mild cho-

lera, is counter-indicated in cholera asphyxia, by the apparent comatose condition of the patient.

"Given in large doses in the period of concentration, it has appeared to oppose reäction, or to plunge the patients into a state of coma, in which they expired. Nevertheless, I have not, in any case, entirely neglected their use: my object in giving them was to diminish the intestinal secretion, the existence of which I admit, although the product was not always discharged externally."

The preparation of opium preferred by M. C. is the theriac or diascordium. Musk, camphor, and castor do not appear, he says, to have fulfilled the expectations of practitioners. He has not used the extract of rhatany, but he says that many respectable practitioners assert it to have been useful.

Of emetics, M. C. does not appear to have had any personal experience, but he states, that they do not appear to have been as useful as their advocates proclaim, nor as injurious as has been asserted by some practitioners.

As to purgatives, he says, that—

"In a disease characterized by an excessive fluxion to the mucous membrane, it appears to me irrational to promote this fluxion; and although the mode of irritation of cholera may be different from that of drastic purgatives, I believe it prudent to abstain from them until positive facts shall have unequivocally established their utility."

We should have some difficulty in believing that any physician should be so irrational as to recommend them, were there not the most positive testimony of the fact. The extraordinary mortality of the disease in those places where it is known that purgatives were recommended, furnishes a sufficient commentary on their use.

As to the proper drinks, M. C. remarks—

"A burning and unextinguishable thirst is one of the principal torments of patients, and in the immense majority of cases, they desire cold drinks. They revive at the sight of a fluid, and especially of a cold one. They devour pieces of ice, which they are told to allow to melt in their mouth, and we cannot relate all the service that ice has rendered in this disease. However, in the stage of asphyxia I have had recourse to very warm drinks, as tea or coffee, and it has appeared to me that reäction more promptly occurred than when iced drinks were given.

"Is it proper to allow the patient to satisfy his thirst, or is it better to allow him drink only in very small quantities at a time? This question is still in dispute. In general, drinking too copiously has appeared to me to promote vomiting. However, several practitioners have doubted the necessity of making patients suffer thirst; and hope by allowing them to drink abundantly, to repair the excessive deperdition of liquids produced by the alvine evacuations. This idea deserves attention."

When the vomiting is obstinate, M. C. has found iced Seltzer water eminently useful.

During the period of concentration he thinks that very warm enemata should be preferred to cold ones; and they should be renewed every half hour, hour, or two hours according to circumstances. When the discharges from the bowels are excessive, iced enemata have been he says very useful. He often alternates the hot and cold enemata, and adheres to one or the other according to their effects; and almost always adds to them a few drops of laudanum or of theriac or diascordium.

M. Cruveilhier thinks that it is to be regretted that the effects of the application of remedies to the respiratory mucous membrane have not been more fully tested; at present we have little however positive in favour of such applications.

Blood-letting so much lauded by the Indian writers, was tried by M. C. in every case of cholera asphyxia which he treated, but he found what has happened to every one else, that in the period of concentration it is impossible to get any blood. He has never tried arteriotomy, but he has known the brachial artery to be severed, and only a few spoonfuls of blood to be obtained. After bleeding M. C. constantly employed leeches to the epigastrium, along the sternum, and upon the sides; and after they had fallen off, he promoted the bleeding by cups.

The desperate state of the patient alone M. C. considers to justify recourse to venous injection, and that it cannot be admitted among the resources of our art, until numerous and positive facts shall have proved that it does not endanger the life of the patient.

At the commencement of the period of reäction, M. C. considers bleeding as contra-indicated, and that it is only proper when the reaction is complete, the perspiration has ceased, and there are symptoms of congestion of some organ. If too early resorted to, it will arrest reäction, and the patient will fall again into collapse, which will quickly be followed by death. Leeches are not attended with the inconvenience of bleeding, but they must not be abused: reäction the conservative effort of nature should be directed and not stopped. Leeches are extremely useful, applied to the epigastrium, to diminish oppression and distress; and applied to the mastoid apophyses in relieving the congestion of the brain.

Baths which M. C. proscribes in the stage of asphyxia, in this he considers of great utility; also cold affusions to the head. When the face is flushed, vinegar and water, or a bladder of cold water, should be applied to the forehead, and cataplasms to the extremities.

Hiccough and obstinate vomiting M. C. does not think alarming symptoms; they yield sooner or later to proper treatment. He recommends ice, or cold water to be held in the mouth, ice to be applied to the epigastrium, the ammoniacal ointment to the same region, or rather baths and leeches.

The epigastric distress, the feeling of a load at the scrobiculis cordis, should be treated by the same remedies, and by a blister to the back, by sedative frictions upon the painful parts, &c.

"Too often, however, we cannot preserve life; the exhausted system reacts incompletely; or indeed the reäction determines the inflammation to different points, which can bring on death, either in the acute or chronic stage; hence the necessity of using internal stimulants and emetics with the greatest caution. At other times the patient dies in the stupor, and in the typhoid stage; and more than one practitioner has repented of having used opium in too strong a dose during the period of asphyxia. We should never forget that the system, insensible to the most energetic therapeutic means, when a considerable disorder exists, is to the greatest degree influenced by them, when symptoms of reäction are manifested."

During convalescence, the strictest attention should be paid to the diet; many convalescents have become victims to neglect of this. It is impossible here to enter into the consideration of the diet suitable to all cases. It should be kept in mind that cholera is an irritation of the gastro-intestinal canal, and the diet should be that best suited to similar cases; that is, of the lightest and most easily digestible kind, and taken in small quantities at a time.

BIBLIOGRAPHICAL NOTICES.

XIV. *The Substance of the Official Medical Reports upon the Epidemic called Cholera, which prevailed among the poor at Dantzick, between the end of May and the first part of September*, 1831, *as transmitted to their Lordships, (of the Privy Council,) being an Analysis of the said Epidemic Disease in that City, founded upon actual Observation and accurate Inquiry, &c.* By JOHN HAMETT, M. D. London, 1832. pp. 189.

This book, as appears from its title, contains the substance of the reports on epidemic cholera, as it prevailed in Dantzick, transmitted to the Lords of the Privy Council, by Dr. Hamett, R. N. &c. who was commissioned by his government to proceed to that city for the purpose of investigating this disease. The manner in which Dr. H. has executed his commission, shows that he was fully competent to the task. Already conversant with cholera in India, he repaired to Dantzick, and examined into the origin and progress of the epidemic in that city with the most careful assiduity; and he has recorded his researches on these points with a minuteness proportionate to the importance of the question which they illustrate. He has also so authenticated his statements, as hardly to admit a doubt of their correctness, even in their unessential details. His investigations demonstrate pretty clearly that cholera did not originate in Dantzick from any imported contagion; or in other and more general language, they tend to show the uncommunicable nature of the disease. Their Lordships, however, had previously come to a different decision on this point. The reports of Dr. H. were nevertheless ordered to be printed, as is the custom; but by a vexatious and unjust course towards him, they were attempted to be passed by *sub silentio*, till the author obtained permission to print them at his own expense. Though the world has had an abundance of publications on this subject, we think the present one should procure for the author the thanks of the medical profession and of the community generally; for he has contributed to the mass of *well authenticated facts*, which are finally to settle what has now, however, almost ceased to be a question, viz. the contagiousness or non-contagiousness of epidemic cholera. And the reports are chiefly interesting, as they illustrate this part of the subject, though the symptoms, treatment, and pathology of the disease have not been neglected.

The interest respecting cholera has now so greatly abated that our notice of the work before us will be much more brief than its importance would have formerly required. Our extracts too, will be limited to such as will show the general bearing of the facts recorded in the reports; for we believe no person who wishes to investigate honestly for himself, the subject of the propagation of epidemic cholera, will be satisfied with any abridgment of facts, however well made.

Dr. Hamett first describes, with considerable minuteness, the medical topography of Dantzick, which he has rendered more clear by subjoining a plan of the city. Then follows 'a brief account of the climate of Dantzick, including

certain deviations in the seasons and physical occurrences previous to the appearances of the epidemic, drawn up from authentic documents;' with a table of the winds and changes indicated by the thermometer, barometer, and hygrometer for the preceding six years. For the interesting details on this subject, we must refer the reader to the book itself.

In Chapter III. p. 14, we have a 'circumstantial report of the first appearance and subsequent irregular spread of cholera at Dantzick;' prefaced with the following observations:—

"It remains a problem to this day, in what manner the cholera morbus originated in and about Dantzick: certainly it is not proved to have been brought hither from Russia or Poland by men or merchandise; because no ship had arrived at Dantzick from any Russian port previously to its appearance, and the intercourse with Poland had ceased since the beginning of the winter. The first symptoms of cholera showed themselves indeed in such a peculiar manner as to exclude even the suspicion of its importation; and it is reasonable to conclude, that the disease originated here in some manner that has as yet not been explained."

To the same effect is the statement of Mr. Gibsone, the very intelligent British Consul at Dantzick, who powerfully aided Dr. Hamett in his investigations, viz. that—

"It," the epidemic cholera, "appeared at a time when it was not known to be within a hundred miles of the place, and without there being the slightest trace of communication with any foreign means of infection." "It must, therefore, have originated in the place, as has indeed been pretty clearly proved."

We commend the following fact to the few who still believe in the efficacy of cordons and quarantines to bar out cholera.

"It is well known that a military cordon had been placed for a considerable time before, along the whole line of the Prussian frontier, next Poland, with a view to keep out the disease prevailing there."

It appears that there were 'isolated or sporadic cases of cholera' previously to the 27th of May, 1831, when the 'two first acknowledged cases of *epidemic* cholera occurred in the harbor canal, one German mile from Dantzick, in two mud-barges;' the two next on the 28th, besides a suspicious case.

'On accurate inquiry however, two or three cases of the malady appeared to have occurred in the town of Dantzick on the 28th in two quite different parts.' 'On the 30th, it appeared not only in the town, but also in the suburb Schlapke; thus at *the same time in two quite different parts of Dantzick.*' 'It continued to spread irregularly, without any marked order from personal contact or proximity, in low, damp and dirty, or close and offensive situations, all over the city, among the destitute and poor, who are here in general ill clothed, ill fed, uncleanly in their persons and dwellings; never wearing flannel next the skin; subsisting chiefly on indigestible and unwholesome food, and in the habit of using pernicious drinks:—habitual drunkards, of whatever class, have been almost invariably the victims of this malady.'

From the commencement of the epidemic, May 27th, to September 8th, the whole mortality, according to official reports, was 1,028 in a population of near 72,000, residing in Dantzick and its immediate vicinity. Of 1,387 persons reported to have been attacked with cholera up to 31st August, inclusive, 1,010 died, and 367 recovered. While the epidemic was at its stadium of intensity, 1,991 inhabitants of the dwellings of cholera patients were shut up in these dwellings, 'exposed to contagion, did such an agency exist,' and subject to the

bad effects of fear, want of exercise and fresh air, though indeed having the essential advantage of being *well fed!* What a commentary is this on the doctrine of contagion! But "few cases took place even among this immense number thus shut up, than abroad among a much less number of the same classes entirely apart from cholera patients and their dwellings!" Our limits forbid our giving the minute details by which this conclusion is shown to be correct, together with several interesting facts and circumstances relating to the rise and spread of the disease. We make room, however, for the following extracts of the first four reported cases of the disease in an epidemic form, 'which occurred without the medium of personal proximity or contact with the disease,' and which all proved fatal.

"Case I. Seventeen persons who lived in the same house, remained well."

"Case II. In the same chamber with him, which is only about ten feet square, were his wife and seven children; in an adjoining chamber two other persons, all of whom remained well."

"Case III. His wife with four lodgers in the same house, and sixty-four persons in all, who came in the closest contact with him, kept well; while one man who fetched a loaf of bread from the mud-barge, and the master of a ship which lay close to it, took sick of the cholera."

"Case IV. His wife and a daughter, three years old, lay the night with him in the same bed; close by lay a boy, three years old, and in a corner of the chamber his mother-in-law. The chamber is thirteen feet long, ten feet broad, and six and a quarter high, with one window of three feet, whereof the upper and under rows of panes were closed with boards. Besides these persons, fourteen more lived in the same house, and all of them continued in good health."

The occurrence of sporadic cases of cholera in Dantzick previously to its bursting forth in an epidemic form, and its appearance in this form at a great distance from any existing focus of the disease, and without any communication—important facts in reference to its communicable nature—accord very closely with what has been observed elsewhere. Sporadic cases occurred in Paris many weeks previously to its epidemic appearance. Sometime in the winter of '31-2, a fatal case of a medical student, we believe, came under the care of Andral, who pronounced it Asiatic cholera. As in Dantzick, so in Paris, the malady commenced epidemically at nearly the same time in remote parts of the city—in the quarter of the Hotel de Ville, and of Gros Caillon.

Our author next considers in successive chapters, the symptoms, pathology, and treatment. In the symptomatology of cholera, little that is new can be expected at the present day. And as regards the pathological remarks, it is no dispraise to say, that the earlier observer cannot be expected to furnish any additional information on a subject of pathology more recently investigated by Andral, Louis, and Bouillaud. Without questioning the correctness of the pathological details in the work before us, we will barely mention some discrepancies from our own observations made in upwards of seventy autopsies. This is not done on account of any importance attributed to the particular state of these organs in cholera, but for a reason exactly the reverse, viz. to show that no apparent lesions of them are essential to the production of the symptoms of this disease. We advert to the "engorgement of the liver and spleen"—'the great moisture of the serous cavities of the chest'—the softness of the brain. We have found the liver and spleen natural, and often deficient of blood,

particularly the latter organ; the pleura very generally *dry;* the brain in a few rare cases in a state of *ramollissement,* with effusion beneath the arachnoid membrane; but in most cases the substance of the brain has had at least its ordinary firmness of texture. We *always* find in the alimentary canal evidences of inordinate action, but how produced, we have not been able to satisfy ourselves.

Our limits permits us to advert to only a single remark under the head of 'preventive means and treatment.' "*Fruit,* still more that which is unripe," is enumerated among the causes that 'tend to produce the disease.' In the prohibition of *unripe* fruit, we entirely accord; but from the sweeping condemnation of fruit and vegetables generally, and the substitution of a diet consisting chiefly of meat, as has been advised by all health councils, and by many members of the profession, not however by our author, we must express a most decided dissent. We know nothing more *salutary* or grateful to the stomach during the existence of epidemic cholera, than good, fresh, ripe fruits in moderate quantities daily; nor is there any diet more *wholesome* at such a period, than one consisting in a good proportion of the various garden vegetables *well cooked.* This opinion has been formed from most ample personal experience, and that of very many who adopted our advice, for months in the largest city of the continent during the most awful ravages of the cholera; and it has been subsequently confirmed by the same manner of life during a month spent in New York city while the cholera prevailed there. Were it permitted to use an argument in the nature of a final cause, we would say—the great predisposing cause of cholera is digestive derangement, or bowel complaints. Now Providence has not erred so egregiously as to furnish fruits most abundantly in that season, when from atmospheric causes these complaints are most frequent; and especially in those regions where such complaints are endemic.

Our author's observations on treatment are judicious, and we recommend them, together with his remarks on "preventive means," and the advice contained in the concluding paragraphs of his work, to the perusal of those who have this disease to manage, or who reside in an infected region. His general treatment consists in the employment of venesection in the robust and young at the commencement of the disease, and sometimes to moderate reäction. He gives mercurials, repeated at intervals, in combination with stimulants, tonics, antispasmodics, antimonials, or mild stomachic purgatives, according to the existing indications.

The remaining chapters, forming by the way rather more than half the volume, are occupied mainly with the "question of the contagion of cholera." In these new facts and testimonies are introduced; others previously mentioned are presented again, and the question is argued. The author has added tables of the names of 841 individuals—the persons attacked with cholera in Dantzick and its vicinity, from the 28th of May to the 23d of July, comprising many interesting facts and circumstances relating to the epidemic. The attention bestowed on this branch of the subject will not be deemed disproportionately great when we reflect that next, and scarcely subordinate in importance to the treatment of spasmodic cholera, is the question of its contagiousness or communicability. If cholera be communicable to persons in health from the sick, their clothes, beds, &c. to act on a contrary opinion would be productive of ill consequences, too obvious

to require pointing out. And on the other hand, if this disease be not communicable, to act as if it were, is by no means the *safe error* which some fancy. Great personal inconvenience, great pecuniary losses, great sacrifices of comfort, health, and life, are among the consequences flowing from this *safe error*. The ordinary intercourse and business between different countries and different sections of the same country, are interrupted; persons are subjected to painful and often *unhealthy* quarantines; the well are not permitted to leave an infected district; the fears of the community, one of the most powerful predisposing causes to the disease, are greatly aggravated; and many an unhappy victim, whom careful nursing might have saved, is abandoned to his fate. And what have we in return for all these inconveniences and misery? A few of the profession live on the errors they propagate, and fatten on the fear of mankind, which they labour to augment.

In consequence of some looseness in the use of the terms *contagious* and *infectious*, several writers have employed the term *communicable*. There are however reasons for preferring the former terms if strictly defined. A disease is *contagious*—that is, communicable to a person in health from a person labouring under it, by coming in contact with the latter, by breathing the air about him, or by touching the clothes, bed, or other things which may have been impregnated with effluvia or matter from him living or from his dead body. A disease is *infectious*, and a region or atmosphere is *infected*, where the disease essentially depends for its origin and diffusion on some electrical, vitiated, or other unknown state of the atmosphere; or on some emanation from the earth; or other local cause not necessarily connected with the presence of persons labouring under the given disease. As to what is denominated *contingent contagion*, we believe it will always be found to mean no more than that increased liability to be acted on by morbific causes, which arises from depression on beholding the sick, and respiring the air of their ill-ventilated apartments; and that this liability is no greater than that produced by a similar depression of the mental and vital powers from any other causes than the presence of persons sick of the given disease.

That spasmodic cholera is not contagious in the foregoing sense of this term, has been fully demonstrated we believe by the careful observation of a sufficient number of facts. Loose and general statements of its propagation by contagion we have indeed in profusion, but they consist for the most part of facts negligently observed or incorrectly reported. The truth of this remark will be obvious to any one who will compare the gossip and rumours respecting the spread of cholera in the north of Europe, collected by M. Moreau de Jonnès of Paris, in his book on Contagious Cholera, with the succinct details of Sandras, who investigated many of the facts on the spots where they are alleged to have occurred.

In proof that this disease was not contagious at Dantzick, we shall quote from the remaining chapters only a very few facts in addition to those already cited or alluded to, referring to the detailed accounts of the author such persons as are desirous of investigating the subject. Our author adduces the written opinions of seven of the chief practitioners in Dantzick in favour of non-contagion. Dr. Baum, Physician General of the Town Hospital in Dantzick, says, that of the twenty-five physicians in that city, '*five* are *for* and *twenty*

against contagion.' Had they decided in favour of contagion, they would have been entitled to double fees, which were refused them on account of their holding the contrary opinion. Dr. Baum also states, "it did not spare institutions which were perfectly shut against any communication with the town." Dr. Hamett mentions the cases of Drs. Baum, Dann, of himself and others, in proof that the disease is not necessarily produced by the inoculation of matter from a recent subject. To the same point, the writer of this article might add, that it occurred to himself to be wounded, and to see those associated with him, often meet with the same accident, while making autopsic examinations in cholera, and without even the suspicion of any ill consequence. It is also stated, that subsequently the cholera cases were placed in the same wards with other patients, and "yet no bad effects ensued." We have witnessed a similar promiscuous arrangement of cholera and other patients in the same wards for a long time, and on an extensive scale, and with no unfavourable consequences. But it is not our object on the present occasion to adduce new facts to prove or illustrate the non-contagiousness of cholera.

Though the doctrine of non-contagion rests wholly on the accurate observation of facts, it would be highly interesting did our limits permit us to do so, to point out the striking failure of analogies between cholera and diseases known to be contagious. The concluding chapter embraces a consideration of the subject under this and other important points of view, from which the author deduces the following inferences.

"I. That it, (epidemic cholera,) is spontaneously produced in certain weak constitutions, and disordered habits of body, in consequence of some indeterminate combination of certain atmospheric and local states, and occasionally in consequence of different powers of electricity in the air, on such constitutions and marked habits, as may reasonably be inferred from the progress of the disease in certain electrical states of the weather."

"II. That cholera spreads epidemically, but irregularly, still in accordance with marked personal and local states more than any other epidemic."

"III. That *general infection*, in the sense I use it, is produced only by an unfavourable or malignant state of the atmosphere in certain localities promoting such a state; and *special infection* by the air being rendered still more deleterious on being pent up, and further vitiated by the *effluvia* of dirt or liquid filth, or on being contaminated with the foul air and *effluvia* of several person, whether affected or not, in close places."

"The very nature indeed of the disease seems to indicate that it is not necessarily propagated by merchandize. Independently, however, of which, there has never been any evidence whatever in Dantzick of its being so propagated; while all the authentic facts which I have enumerated on this head in that particular quarter, declare strongly against contagion in this way; to which I could add, as formerly stated, some others of a private nature, also strikingly against it." "In conclusion—

"It necessarily follows, from all the facts which I have adduced, that epidemic cholera cannot be possibly averted by all the combined mechanical restrictions of man. Indeed, the most accurate inquiries have hitherto ascertained that it rises spontaneously, and spreads capriciously and widely, still in conformity with its own determinate laws, in despite of every precautionary restriction; so that we might as well attempt to wall in the birds of the air."

On the subject of cordons, we cannot refrain from quoting for their obvious and practical good sense, the following remarks in a communication from Mr. Gibsone to Dr. Hamett.

"Were the expenses occasioned by these restrictive measures, applied to establish good hospitals, and to provide the needy with a sufficiency of wholesome food; and were proper means used to convince people that they can best secure themselves against the baneful effects of the sickness by carefully avoiding the causes of it, and by promptly meeting its attacks with proper remedies, and with fortitude and equability of mind, it might confidently be expected that its ravages would be greatly diminished."

For if cholera be under any circumstance contagious, its contagion is of so subtle a nature, that all attempts to prevent its diffusion by sanatory cordons, have hitherto signally failed. We cannot conclude this notice of Dr. Hamett's reports, without again warmly recommending them to all who wish to study the progress of epidemic cholera. We have here presented to us the facts and circumstances connected with its origin and existence in Dantzick, most carefully and diligently sought out, and investigated with ability, and in a spirit of honest inquiry after truth. A. S.

XV. *An Essay on Epidemics as they appeared in Duchess county, from* 1809 *to* 1825*; also a Paper on Diseases of the Jaw Bones, with an Appendix, containing an Account of the Epidemic Cholera, as it appeared in* 1832. By Hunter Sherrill, M. D. New York, 1832. pp. 184 & 38. 8vo.

In the existing state of medical science, few subjects are so important or interesting, as the history of the character and progress of epidemics. Modern anatomy has thrown its light upon the intimate structure and distribution of every tissue which enters into the composition of the human frame; something is still to be learned, but we are rapidly verging toward the boundaries which our finite powers prescribe to the investigation of the mechanical structure of this machine. Physiology, as an experimental science, has been cultivated to a great extent, within a few years, and although we occasionally witness the promulgation of vague or ill-founded theories, for the most part resulting from a culpable neglect of the operation of mechanical and chemical laws upon living organs, most of the healthy vital functions are now explained upon principles truly philosophical.

But pathology is still in its infancy. The grand fundamental principle that *all fevers and most other diseases which flesh is heir to, are primarily produced by local irritations*, may, it is true, be now regarded as established. The language of medicine is changed, and our ideas are rendered more precise, in a corresponding degree. We scarcely hear the word *idiopathic*, employed in speaking of disease; even debility and excitement are considered, for the most part, as local and reciprocal excitement in one part, being necessarily productive of debility in some other, and the whole amount of excitability in the system remaining constant. General debility is an antiquated term; even in the collapse of cholera asphyxia, we are taught to seek for irritation and active inflammation of the intestinal canal.

It is by the close observation of the effect of local situations, habits, and climate, in modifying the character of epidemic diseases, that we are enabled to discover what is due to general and what to minor causes. Every contribution made to medical topography is therefore a treasure laid up for the benefit of posterity, although it may not prove immediately interesting. Even a dry and

barren account of the dates of the appearance and cessation of each disease, at any particular spot, is not without its value, for from the gradual accumulation of such facts, important inferences may be drawn. With the progress of great epidemics in large cities, the profession is made generally acquainted, but much of the ill-feeling produced by the discussion of moot points in medical and medico-legal science, would be prevented if there existed the same facility in acquiring intelligence from the country. The domestic origin of many diseases supposed to be imported, would then be proved beyond dispute, and the vexatious quarantines that so often produce the evil against which they are intended to guard, would soon be abandoned.

It is to country and district medical societies that we must appeal for information so highly desirable, and the little volume before us originates from such a source. The incongruity of the subjects announced on the title page is rather apparent than real, for the "diseases of the jaw bone" which are described in a paper intermediate between the essays on the epidemics of Duchess county, from 1809 to 1825, and that on the cholera as it appeared at Poughkeepsie in 1832, are analogous to *the cancrum oris* of Pearson, *the gangrenous ulcer of the mouths of children*, described by Dr. B. H. Coates, in N. A. Med. and Surg. Journ. Vol. II. p. 1. &c. which affections are sequelæ of certain forms of fever, and have direct relation to the peculiar features of epidemics.

Dr. Sherrill's work contains a series of addresses delivered at different times before the medical society of Duchess county, New York. The first bears date 1819, and is a retrospective review of the prevalent diseases of the preceding ten years. From 1809 to 1811 inclusive, the county was subject to the usual routine of intermittents, mild in the spring, becoming more severe, and mingling with remittents as the season advanced, until in the autumn, bilious remittents of a very grave character appeared, and in some districts prevailed to an alarming extent, and with such violence that the Hyde Park fever became proverbial in the surrounding country. The winters were generally healthy, although occasional cases of catarrh, pneumonia, enteritis and croup, &c. occurred. In the fall of 1811 this order of things disappeared, and the high bilious remittents of the autumnal months have not since been prevalent.

The close of this and the commencement of the succeeding year, were remarkably healthy, there being but little disease, except a singular cutaneous eruption which was known by the popular name of the *merino itch*, the nature of which cannot be ascertained from the imperfect notice furnished. This eruption proved very obstinate, and required for its cure, the internal and external employment of mercurials. "May not this disease have been," asks Dr. Sherrill, "a precursor of one of more violence which followed it—the winter epidemic?"

In February, cases of a novel character began to occur, and not unfrequently terminated fatally in an unexpected manner. These cases were the heralds of the epidemic then known by the title of spotted fever, which soon became general throughout the county, and proved terribly fatal in many places. An accurate list of the deaths by this disease in the town or township of Stanford was preserved by Rev. L. Birch, and the results was as follows:—January, 4; February, 6; March, 18; April, 24; May, 11; June, 2.—Total 63. Extent of the town fifty square miles; population 2350; rate of mortality 1 to 37.3. The numerous and detailed accounts of the progress of this epidemic which are before

the profession, render it unnecessary to describe the symptoms as given by Dr. Sherrill; suffice it to say that the number of cases of sudden collapse, and excessive engorgement of the lungs, was less numerous in Duchess county, than in many other situations, and the epidemic appears to have been more strongly influenced by the local diseases, generally prevalent in that district, so that bilious symptoms and a remittent disposition were more frequently encountered.

Dr. S. very early adopted the employment of venesection and the free use of purgatives, notwithstanding the current of popular opinion which set strongly in favour of a stimulant course: a corresponding improvement in the success of his treatment was the result.

"The blood was usually of a dark appearance, *showing signs of not being properly oxydated*, and at the first, bleeding did not always show the sizy coat, when it afterwards did. *It often had the colour and consistence of molasses.*" p. 40.

This epidemic continued through the years 1812 and 1813. In 1814, it gave place to the remittent fever complicated with dysentery, which displayed itself at first among the militia stationed at Harlem, and Brooklyn, and was hence termed the Harlem fever—it was chiefly confined to the soldiers and their attendants.

From this period to 1819, there was no general epidemic. The autumnal remittents began gradually to reäppear, and the diseases of other seasons assumed by degrees the form of "simple phlegmasial excitement." The year 1819 opened with many cases of disease of the throat and fauces, producing general soreness of the throat and difficulty in deglutition. There was swelling of the mucous coat of the œsophagus, producing in some, the idea of the presence of a foreign body. When the inflammatory symptoms subsided, there remained a debility of the glottis producing hoarseness and difficulty of speech. Most of the inflammatory affections occurring at this period, were attended with strong determination to the brain, pain, stupor and sometimes delirium. This affection was followed in several districts by scarlet fever, or cynanche maligna, but it was generally of a very mild character. It was during the summer of this year that the yellow fever reäppeared at New York, but although the bilious autumnal fevers of Duchess county were rather more protracted than usual, they did not become widely prevalent.

The second paper of Dr. S. is an address delivered to the same society in November, 1825, and relates to the diseases of the county from 1819, to that date. An unusually healthy winter ushered in the year 1820, but the summer produced a severe epidemic dysentery, sporadic cases of which occurred in several succeeding seasons, but it did not become general again until 1825. During the intervening period, the vernal intermittents and the autumnal remittents were frequently encountered; but they differed from those which prevailed prior to "the winter epidemic," in exhibiting no prominent external symptoms of *bilious affection*, either on the skin or the tongue. Torpor of the surface was often observed. In 1825 a much stronger tendency to the typhoid condition was obvious, and numerous cases of regular typhus fever occurred, attended in some cases by a hæmorrhagic disposition. Blood drawn at the commencement, was dark and heavy, and very thick. Dr. S. appears not to

be deterred from active depletion by signs of apparent debility. The latter part of this paper contains some speculations on the variola and varioloid which prevailed in Duchess county in 1823, and again in 1825, and some notice of other diseases of more strictly local character; it concludes with some remarks upon puerperal fever, with abstracts of three successful cases.

Next follows an essay on the caries of the jaws of children, prevalent in the New York Alms-house, read before the Medico-Chirurgical society of the University of New York, in 1808; to which is appended a letter on the same subject from Professor Francis, dated December 13th 1825, and the description of the disease as it prevailed in the Children's Asylum, extracted from the paper of Dr. B. H. Coates, to which reference has been made.

The original paper of Dr. S. is the earliest public notice of this formidable disease in America, with which we have met. It contains several interesting cases. The author gives strong testimony in favour of the local application of a solution of sulphate of copper, the remedy so successful in the practice of Drs. Vanmeter, Beasley, and Coates, and in this he is joined by Dr. Francis; but we regret that he has recommended a weak solution in the commencement of the disease. Having had to contend with the affection in many cases, for it prevails at times in all marshy districts as a sequelæ of intermittent and remittent fevers, we feel bound to insist on the high importance of employing a saturated solution in every case. Success is never secure unless the wash is applied to the whole diseased surface, and therefore not only every diseased tooth, but also any portion of the jaw to which the necrosis may have extended, should be removed if possible. One of the principal reasons of our frequent failure when the mortification has extended to the cheek, is the difficulty of reaching the living parts concealed beneath the sloughs; under these circumstances the plan recommended by Marjolin in the Dictionnaire de Medicine, *Art. Gangrene de la Bouche des Infans*, that of cutting away the greater part of the sloughs, should be employed. By completely impregnating the remainder with the solution, using externally the saturnine poultice, as applied in the case under the charge of Dr. R. M. Huston, quoted by Dr. Coates, which case we saw during its progress, the life of the patient may be saved under circumstances apparently desperate.

The most extensive destruction of parts which we have seen described in a case terminating favourably, is communicated to Dr. Sherrill, by Dr. Beers, of Clinton, (p. 114.) In this patient, a girl aged eleven years, the necrosis involved the whole right side of the upper jaw, extending to the molar bone, and the disease ultimately affected the lower jaw. The cheek became gangrenous, and ulceration extended through its whole thickness, from the angle of the mouth nearly to the ear. She lost ten teeth.

"When the gangrenous tendency of the system was discovered, the patient was treated with vigorous antiseptic and stimulant remedies. The debility and prostration, a part of the time, were so great as to require the most liberal use of these remedies. The strength was supported, and the diseased portions of the bone were separated from the sound. The space was filled with a new growth of parts, after a long and tedious process. The wound closed up, and the patient recovered, and is still enjoying tolerable health." p. 115.

At the request of Dr. D. F. Condie, several years ago, we removed from a lad in this city, that portion of the upper jaw which intervenes between the

third molar tooth on the right, and the second on the left side, together with the palatine plates, and the nasal processes complete, it being in a state of necrosis, and the periosteum apparently destroyed. The patient was supposed to have laboured under the complaint in question, but if so, the powers of nature, aided perhaps by the unprofessional advice of friends, had arrested the gangrenous tendency before medical aid was called; very little deformity resulted. We have since removed several large portions both of the upper, and the alveolar process of the lower jaw, in the same complaint, and whenever it has been possible to apply the saturated solution of the sulphate of copper to the living parts over the whole diseased surface, the disease has been arrested.

After a supplementary note on an epidemic, or rather endemic dysentery in 1826, Dr. S. gives us a short essay on the epidemic cholera as it appeared in Poughkeepsie in 1832. We regret that he has omitted all notice of the terrible influenza, and the singular and complicated cutaneous affections which preceded its appearance. There is little novelty in this essay, for so much has been written on the subject, by the disciples of all schools, that it is not difficult to predict the opinions which will be formed by any individual when he becomes acquainted with this epidemic, if we are informed under what banners he is enlisted. Dr. S. is evidently of the school of Rush; with the exception of the occasional use of the term gastro-enteritis, he gives us no evidence of adhesion to more recent doctrines. He considers cholera asphyxia as an inflammatory affection, bearing more resemblance to pneumonia typhoides than to any other disease well known in this country. He regards the morbific poison as acting on *the whole system*, and believes that there exists inflammatory action throughout the intestinal canal, with excessive engorgement, both of the thorax and abdomen, which he regards as a highly inflammatory symptom, for he draws no distinction between congestion and inflammation. The term irritation, in the sense in which it is now employed by the physiological school, does not occur in the work. This is to be regretted—the language of science should be universal. In addition to external warmth and sudorifics, Dr. S. strongly advocates the propriety of frequent and small bleedings and free catharsis. Among the purgatives, a combination of rhubarb and sulphate of magnesia was preferred, and calomel was employed but seldom. The author speaks flatteringly of his success, but has furnished but few details.

It would be impossible for us, within the limits of this notice, to discuss our opinions of the proper treatment of cholera, but we should be very culpable in not expressing a strong difference of sentiment upon one point. "During the premonitory stage," says the author, "a brisk cathartic or an emetic, followed by opiates and astringents, would frequently carry off the approaching disease." We have seen such frequent ill-consequences, and sometimes such terrible evils from the use of active cathartics in the earlier stages of cholera, or during the premonitory diarrhœa, that we must express our disapprobation of their employment. It is within the recollection of perhaps every practitioner, largely engaged in treating this disease in or near Philadelphia, that many cases were actually produced by doses of purgative medicine which at another period would have proved harmless. The irritability of the intestines is such that we have been compelled to use caution in treating other complaints, to avoid excessive exhaustion from hypercatharsis.

In taking leave of Dr. Sherrill's work, justice demands that we should complain of an occasional want of precision in terms, and a neglect of grammatical accuracy. These papers were delivered at very different periods, and some of them, which have been before presented to the public, are now reprinted with additions, and it would be unjust to expect perfect uniformity of manner under such circumstances; but when facts are of sufficient importance to warrant publication, they deserve to be carefully observed and clearly stated. What is meant by bilious affection, or head affection, enumerated in several places among the symptoms of particular fevers, and attended by no explanation? Some of the numerous mistakes in grammar, and even in the arrangement of phrases, may be chargeable upon the printer, but it is dangerous for an author to be so careless in the correction of the press.

The state of New York deserves high praise for the system of county medical societies which she has instituted, but the profession has some reason to complain that so little intelligence has yet emanated from this source. Why are not regular records of the progress of epidemics, accompanied by meteorological observations, so seldom preserved by these societies? It is a disgrace to the great state of Pennsylvania that she has been still more tardy in the march of improvement. R. C.

XVI. *The Anatomy and Physiology of the Organ of Hearing, &c.* By DAVID TOD, Member of the Royal College of Surgeons. Octavo. pp. 147. London, 1832.

The attention of medical writers has latterly been bestowed more upon an improvement in the treatment of cases of diseased hearing, than upon that of the anatomy of the parts concerned. Most of the anatomical observations of the present time are therefore a mere repetition of what has been so well said by preceding writers, and especially by the late celebrated Scarpa, in his Disquisitiones de Auditu et Olfacto. It is a subject of sincere regret that this apparent perfection of anatomical knowledge on the ear, and the extreme difficulty there is in adding any thing of value to it, should not have been followed by equally improved processes of treatment; it is however a melancholy fact, that very many, perhaps one-half of the derangements and imperfections of the sense of hearing, derive little or no benefit from medical attendance, and that some of them are even rendered worse, by hazardous and experimental modes of treatment.

The work announced in the caption of this article has the novelty of a very large addition to the ordinary list of muscles of the ear; and also some other new descriptions, as well as a considerable amplitude of physiological discussion in explaining the functions of different parts of the organ. It is upon the whole somewhat elaborate in its composition, and creditable to the ingenuity of its author.

The reader will perhaps be glad first of all to learn its anatomical novelties, which are as follow. Two muscles to the external ear, of which Mr. Tod calls one the obliquus auris, and which is placed on the dorsum of the concha, and another called by him contractor meatus or tragico helicus from the attachments implied in this name. The remaining muscles are found in the tympanum.

"1. *Anterior Mallei** arises by a very small beginning from the extremity of the spinous process of the os sphenoidale, and from thence runs backwards, outwards and upwards, along the outer surface of the Eustachian tube, and through the fissura glaseri and canalis anterior, from the surface of which it receives many fibres, and is

"Inserted into the whole length of the processus gracilis, and anterior surface of the head of the malleus, where there is a small eminence near its cervix.

"2. *Posterior mallei* arises broad, thin and fleshy, from the sulcus semilunaris and parts above it near the groove of the os annulare, and from thence passes forwards and inwards, and is

"Inserted into the posterior surface of the manubrium mallei below its processus brevis.

"3. *Internus manubrii mallei* arises by a very small beginning from the posterior cartilaginous extremity of the Eustachian tube, and broad and fleshy from the sinus muscularis. The fleshy fibres from these origins terminate in a slender round tendon, which runs directly outwards from the sharp osseous ridge at the termination of the anterior extremity of the processus fallopii, and is

"Inserted into the inner surface of the manubrium mallei behind but a little below its processus brevis.

"4. *Anterior capitis mallei* arises from that part of the outer surface of the fossa navicularis just before the head of the malleus, and from thence runs obliquely backwards and inwards about the twelfth part of an inch, and is

"Inserted into the depression in the anterior surface of the head of the malleus.

"5. *Superior capitis mallei*† arises fleshy from that part of the superior surface of the fossa navicularis just above the head of the malleus, where it is articulated with the body of the incus, and from thence descends, and is

"Inserted tendinous into the superior and inner part of the head of the malleus, close to the margin of the articulating surface.

"6. *Obliquus incudis externus posterior* arises fleshy from the external surface of the fossa navicularis just before the beginning of the mastoid cells, and from thence descends obliquely forwards and inwards, and is

"Inserted into the middle of the superior surface of the processus brevis incudis.

"7. *Triangularis incudis*‡ arises broad and thin from a part of the sulcus semilunaris on the inner side of the posterior mallei, and from the root, and sometimes from the whole length of the posterior surface of the manubrium mallei. From these origins the fleshy fibres run in a converging manner, the posterior obliquely forwards and inwards, the superior obliquely downwards and inwards, and the anterior obliquely downwards, backwards and inwards; and the whole are

"Inserted broad and thin into almost the whole length of the outer surface of the processus longus incudis, and the anterior surface of the cervix of the stapes.

"8. *Stapedius posterior* olim *stapedius* arises fleshy from the sulcus stapedius, and from thence passes forwards, and a little upwards and outwards, in the form of a pyramid, and is

"Inserted tendinous into the depression in the posterior surface of the cer-

* "I have named the muscles more from their situations than their apparent actions. The names already in use are very objectionable, particularly the laxators and tensors; for the membrana tympani is always kept tense, after the os annulare becomes amalgamated with the entire bone, by the action of its own muscular fibres, which are more powerful than the combined strength of all those belonging to the cavitas tympani."

† "This muscle is described by Sœmmering as a ligament. He calls it ligamentum proprium teres."—*Sœmmering, Icones Organi Auditus Humani, tab. ii. fig.* 20.

‡ "This muscle is noticed by a Dr. W. Holder in the year 1668. Vide Philosophical Transactions, vol. iii. p. 666.

vix of the stapes, and membranous into the posterior surface of the button-like process of the incus, and a small portion of its long process.

"9. *Musculus* or *Structura stapedius inferior.* This muscle, or structure, (for I have not as yet been able to discover muscular fibres in it sufficiently clear to warrant my calling them by that name, although it looks more like muscular texture than any other,) arises broad and thin from the middle of the outer surface of the eminentia pyramidalis, and from thence extends obliquely upwards and outwards in the form of a pyramid, and is

"Inserted into the under surface of the cervix and crura of the stapes.

"There is another structure apparently muscular extending from the external surface of the fossa navicularis directly opposite to the head of the malleus and body of the incus, and fixed to those parts of the bones."

The first, third, and eighth, the anatomist will recognise as old acquaintances, and are admitted as such by our author, they having been merely rechristened; from this, as well as from several other indications, Mr. Tod exhibits himself as an anabaptist, at least in anatomy, a feature in his work to which we have some objections presently to be explained. On the score of these supernumerary muscles, Mr. T. in a note to page 19, speaks of the certainty of finding them, in a tone of such assurance and good faith, that we can scarcely doubt the sincerity of his belief on the matter. Having looked patiently for those muscles, however, and under circumstances sufficiently favourable as we thought for detecting them, we are unfortunately compelled to withhold a concurrent testimony, at least until further inquiries have satisfied us. The ardour with which new observations are taken up, will however no doubt in a short time settle this point conclusively for or against Mr. T.; for the present we will therefore simply state, that after two dissections on fœtal ears conducted with care, we have not been able to find any thing more than what is generally known and admitted.

We here and there find remarks for which we were not prepared; for example, (p. 12,) that the passage from the tympanum into the cochlea is called scala tympani; that the dura mater forms a periosteum (internal) to the labyrinth, and a part of the membrane of the foramen ovale, and of the foramen rotundum, (p. 13, 68,)—that the dura mater is a serous membrane, (p. 74,)—that the pia mater lines the labyrinth of the ear, (p. 76.)

We also observe that our author has called one end of the promontory eminentia pyramidalis, instead of attaching that name to the process of bone containing the stapedius muscle. In the most of this category there is a striking departure from the best authorities, we think rather to the prejudice of the subject, and also to that of the author. The latter, as all other anatomists must know, that from the permanent and unvarying character of this science, the terms in use are generally derived from the highest and most classical writers, and that it is not usual to change them, or to introduce new ones, except in case of positively new discoveries. At least, if any one does so he finds his terms a mere provincialism or dialect of anatomy, known only to himself and the little circle of which he may be the centre. A remarkable instance of this sort of abortion in nomenclature must be present to his mind in the attempt made by Dr. Barclay of Edinburgh, to introduce an anatomical vocabulary new in many respects, the adoption of which we rather think never extended beyond his immediate pupils, and which was certainly never incorporated into the classical and authoritative productions of the science. It is not meant that all the old terms, and old applications of them, are the best that could be used, but only

that there is no authority now existing in anatomy capable of changing them, and that it would probably be a fruitless task even if undertaken by the highest medical tribunal in the world, to wit, the school of medicine in Paris, with all its subsidies of public and private professors of anatomy. We would here just suggest, that the best general standard of Latin nomenclature, and its application to structures, is to be found in J. F. Meckel's Manual of Anatomy. This anatomist has himself, notwithstanding his own personal and hereditary reputation, been extremely sparing of innovations; and has shown much judgment in keeping his language from becoming a mere dialect, by resorting only to a phraseology which may be considered entirely classical and scientific in consequence of the very eminent sources from which he has derived it.

Mr. Tod, at the end of the chapter treating on the anatomy of the ear, gives the following directions for exhibiting the structure as he has described it.

"*Directions how to expose the apparatus tympani without doing the textures much injury.*—Take the temporal bone of an infant or fœtus, and after injecting it, remove all the soft parts from its surface, keeping the membrana tympani entire; then introduce the point of a small scalpel between the os annulare and the petrous portion on the under surface, and separate the one gently from the other, so as to raise the two inferior thirds of the former about a quarter of an inch from the latter, and put a small piece of wood between them until the parts become quite dry. The different parts will then remain permanently *in situ*, only a little on the stretch. Again; take another temporal bone of the same age, and gradually remove the osseous shell which forms the upper part of the fossa navicularis and the inferior part of the cavitas tympani, and put the preparation aside to dry. Every texture will then appear *in situ*, and in a state of integrity. By repeating these dissections with slight alterations, every structure will be demonstrated in a variety of ways."

The second chapter treats on the physiology of the ear, and presents some experiments to show that the external ear is for the purpose of enabling animals to detect the accidental or local properties of sound. The speculations in this chapter are numerous and ingenious. We introduce an example.

"Nothing can display the frugality of nature, or the mystery of her works, to greater perfection than the membrane of the fenestra ovalis,—a membrane which, when excited by the basis of the stapes, performs more important functions than any other part of similar dimensions in the body, and when diseased deprives us of a sense the most pleasing as well as the most useful in the animal œconomy. But for the known importance of its function, this little membrane would probably never have arrested the attention of the anatomist and physiologist for a moment. A very remarkable circumstance is, that the membrane of the fenestra ovalis, though performing peculiar functions, should be merely a portion of that one which covers every nerve in the body. In contemplating the animal machine, no part fills the mind with greater wonder than this membrane,—a structure extremely thin and semitransparent, occupying a small semilunar hole, the diameter of which does not exceed the eighth part of an inch, and yet possessing the power of concentrating all the effects which the innumerable sonorous properties produce in the apparatus of the tympanum, and of conveying them to the sensitive theatre of the ear;—the means are truly insignificant compared with the magnitude of the end. That we should be indebted to so flimsy a texture, moved in various ways and degrees by the base of the stapes, for all the pleasures arising from eloquence and music, is truly surprising. But the mysteries of nature surpass all comprehension. The more we dive into her secrets, the more do we become embarrassed and perplexed with the littleness of our understanding."

The author finds a difficulty in the observation of Scarpa, that the cavity of the tympanum in the fœtus is filled with a fluid to prevent audition; there is, however, a special check put upon the sense, not only by this mode, but also by the inferior semicircumference of the meatus externus, coming up in contact with the membrana tympani, so that rays of sound are kept from impinging directly on the latter, even for some time after birth.

The third chapter enters somewhat at large into an examination of the causes of congenital deafness; they are referred to two, principally scrofula and syphilis, destroying the texture of the labyrinth. We have just alluded to the idea of the author, of the labyrinth being lined by the dura mater and pia mater; he adopts this notion as a fundamental point for explaining congenital deafness, which he believes to depend frequently upon the morbid changes of these membranes. As all of this is in the region of speculative anatomy and pathology, it may be as well for us to keep out of it, for nothing can be less certain. He, however, furnishes a practical remark of value, which is, that in almost every case of congenital deafness he has found the membrana tympani so defective as to indicate its being the sole or main cause of the disease, (p. 82.) It would here have been interesting to us to have what the French call a numerical table, illustrating the foundation of this and other opinions.

Chapter IV. introduces us to the treatment; the favourite local remedies are ammonia and ether.

"Among the local stimulants of the first class, we are inclined to think that ammonia is by far the most important: for by the judicious administration of this agent, we can often not only excite the actions of the vascular system belonging to the locomotive machinery of the ear, but also of that of the labyrinth, to such an extent as to render the auditory apparatus capable of performing its functions very perfectly for a time. In the different cases in which we have tried this remedy, we have found, that combining it with the linimentum camphoræ, and applying it with a camel-hair pencil to the surface of the meatus externus, or the cavitas tympani, (when the membrane was absent,) was the safest and best mode of employing it. By this method we have the power of producing either a slight or a high degree of inflammation, and, of course, of suppuration; and, by occasional applications, of preserving the parts in either of these conditions as long as we may think necessary. When we produce suppuration, it should never, however, be to any great extent or degree; and during its continuance the parts should be frequently cleansed with tepid water: for in exciting this process, the only object we can have in view is, the production of a certain action in the nutritious vessels, so as to induce them to secrete, if possible, those textures which the functions of the primordium and embryo have been unable to develope; or to direct the powers of life to the faulty phænomenon, in such a manner as to cause the existing structures to act agreeably to the ordinary intentions of nature. In every degree and stage of inflammation which it may be deemed adviseable to excite, one or two ounces of tepid water should be injected every day into the meatus externus; for by this means we both soothe the inflamed surfaces, and also remove from them all dead and irritating matter, and thereby keep up that kind of action which appears most likely to produce the effect desired."

"With respect to the second remedy of a local nature which we have mentioned, viz. æther, we may observe, that it is in importance next to ammonia; and although it has been more frequently employed in the treatment of occasional deafness than in congenital cases, it is nevertheless often capable of proving very beneficial in the latter. In every case in which I have given it a trial, I discovered that the patient could be made to hear sounds of a kind

which he could not hear before. In all cases of deafness arising from any morbific action in the structures of the tympanum, or of the Eustachian tubes, or of the meatus externus,—such as a privation of the ceruminous secretion,—however, it is a remedy more decidedly useful."

Several other articles are mentioned, but the sanative rules and items are pretty much those mentioned by Itard and others. W. E. H.

XVII. *Phrenology in Connexion with the Study of Physiognomy.* By J. G. Spurzheim, M. D., of the Universities of Vienna and Paris, and Licentiate of the Royal College of Physicians of London. Illustration of Characters, with thirty-five plates. First Am. ed. improved, to which is prefixed a Biography of the author. By Nahum Capen. Boston, 1833.

This elegant work, now first issued from the American press, was originally published in London, in 1826. Though not strictly medical in its character, it contains matter of high importance to those who would wish to contend understandingly with diseases of the mind, and it is admirably adapted to excite an interest in the study of a novel branch of physiological science, which, while it elucidates many points in the history of morbid actions, both of the body and the mental functions, sheds light upon all the highest interests of society by its relations with education, jurisprudence, and ethical philosophy.

It is almost presumptuous to praise any of the labours of Spurzheim, so widely spread is the well-earned reputation of this rigorous observer of nature. The vast extent of his contributions to anatomy, in unfolding the intimate structure of the noblest of our organs, is now universally and gratefully acknowledged; but in this country, his physiological opinions are less known or appreciated. We have not yet recovered from the influence of the rancorous shafts hurled against the founders of phrenology by the Edinburgh Review, which so often, and so boastfully, but fortunately, so impotently threatened to strangle the Hercules in his cradle. The eloquent tongue that could best dispel this ignorance is silent. Scarcely had the light of that countenance which beamed with benevolence toward all mankind, shone for a moment upon his first American audience, when Spurzheim was no more.

The prophet is gone, but his mantle is upon us, and we hail with gladness the appearance of this volume, as one of the most attractive of his labours, and that best calculated to command general attention. The biographical notice which precedes it, contains a highly interesting narrative of the progress of Dr. Gall, in the discovery and diffusion of phrenological principles, and of the untiring exertions of Spurzheim, in his investigations into the anatomy and physiology of the brain, and in making known the results in Germany, Prussia, France, England and America. The manner in which Dr. Gall was first induced to attend to the form of the head, as an indication of the natural talents and turn of mind, is known to almost every one who reads. In 1796, he commenced his first course of private lectures at Vienna, and in 1799, Dr. Spurzheim, then a student of medicine in that metropolis, was numbered among his hearers. These lectures were repressed by the Austrian government in 1802; and in 1805, these two philosophers commenced their travels over Europe, to spread their opinions and to perfect their favourite science.

In their visit to the prisons at Berlin and Spandau in April, 1805, Dr. Gall pointed out the peculiar development of more than two hundred criminals, of whose history he was totally ignorant, and in the presence of the commissioners appointed by the Prussian government to witness the application of his doctrines, he declared to the astonishment of all, not only the general disposition and habits of the prisoners, but, in many instances, the nature of the crime for which they were committed. From a ward of female thieves, he instantly selected one woman, undistinguished from the rest by dress or any other mark, exclaiming, "for what reason is this woman here, for her head announces no propensity to theft!"

These examinations were made the subject of an official report to the Prussian government, and excited at the time, great attention and surprise. The account of the career of these physiologists while in company, and that of Dr. Spurzheim alone, since their separation, furnish so many authentic instances of similar tact, that it is impossible for any one to rise from the perusal without a strong desire for further information on the principles of a science which confers upon its professors so deep an insight into the nature of man.

In 1807, they jointly delivered their first course of lectures in Paris. During the succeeding year, they submitted to the institute a memoir on their peculiar views in relation to the anatomy and physiology of the nervous system, and delivered a private course of lectures illustrated with dissections of the brain for the especial benefit of Baron Cuvier and a select circle of his friends. This profoundly-learned and truth-loving naturalist was most favourably impressed with regard to their doctrine, as is known by the manner in which he habitually spoke of them; but in the report to the institute, which was drawn up by him, he did not dare to express himself with perfect candour, for the wonderful man who then guided the destinies of the world, enraged that his first comparative anatomist should condescend to be instructed by one who was not born within the limits of the great nation, and having recently granted reluctant permission for the award of a medal by the institute to Sir Humphrey Davy, severely "rated the wise men of his land for allowing themselves to be taught chemistry by an Englishman, and anatomy by a German."

This narrow-minded jealousy, and the consequent "faint praise" of the report, led to a rejoinder and much discussion; but the novel doctrine continued to gain adherents, and is now established in France by the adhesion of many of her wisest and best. In 1809, they commenced publishing their great work, "*The Anatomy and Physiology of the Nervous System in general, and of the Brain in particular; with Observations upon the possibility of ascertaining the several Intellectual and Moral Dispositions of Man and Animal, by the configuration of their Heads. 4 vols. fol. with an atlas of* 100 *plates.*" This magnificent monument was not completed until 1819. Two volumes and half the third were the result of their joint labours, and the remainder was completed by Dr. Gall alone, after his separation from Spurzheim, which occurred, as it is said, from some personal disagreement between the authors in 1813. It is deeply to be regretted that the great cost of this work places it beyond the reach of most of those who are far removed from large public institutions.

After the separation, Dr. Gall remained in Paris practising his profession, and devoting many of his leisure hours to the study of various animals which he had

domesticated for the purpose. The biographer quotes, from a writer in the Birmingham Journal, a most amusing account of a visit to this philosopher in 1826. He found him at seven o'clock in the evening in a room, "the walls of which were covered with bird cages, and the floor with dogs, cats, &c." The doctor gave him an example of "offended pride" in a favourite bitch. By caressing her whelp with a degree of fondness which he denied to the mother, she immediately withdrew to her mat, from which she could not be again enticed. "She heeded not the hand which she had so earnestly endeavoured to lick but an instant before. She will not speak to me to-day, said the doctor." He also pointed out a black bird, whose secretiveness was so remarkable that he would not accept as a free gift, that very food which he would seize and devour, or conceal, the moment he was permitted to do so by stealth. We allude to these anecdotes merely to show the vast extent of those observations upon which the science of phrenology is founded. Gall died at the age of seventy-two, in the year 1828. His labours did not tend to the enlargement of the boundaries of phrenology after the separation in 1813, and the biographer takes leave of him at that period, to pursue the career of Spurzheim in his independent exertions.

The author of the work under notice, arrived in London in March, 1814, and delivered there two courses of lectures, but they attracted but little attention from the public. Some astonishment was indeed excited by his exhibition of the fibrous structure of the brain at the hall of the Medico-Chirurgical Society, and he had the satisfaction of enlisting in favour of his science the judgment of Mr. Abernethy, who was in himself a host. A fine contrast is presented between the extracts as given at page 44, et. seq. from the liberal and manly acknowledgments of that justly distinguished surgeon, in the second volume of his Surgery, and those from the Edinburgh Review, for June, 1815. After visiting several English cities, and spending some time in Dublin, Dr. Spurzheim proceeded to Edinburgh. His complete triumph over his calumniator of the Review is now well known, for the home of its arch enemy has become, as Dr. S. prophetically declared it should, the future centre of phrenological intelligence, and even the journal itself has been compelled, laggingly, and with much reluctance, to yield to the current of public opinion.

In 1817, Dr. S. returned to London, and delivered another course of lectures, but his audience continued small. He published at this time four works in English—*The Physiognomical System, in octavo; Outlines of the System, in duodecimo;* his work on *Insanity, in octavo,* and a reply to the reviewers. In July he returned to Paris. Here he proposed to fix his residence for life, and continued his lectures until 1825. Dr. Gall also, at the request of the Minister for the Interior, renewed his lectures to the medical students, and phrenology became firmly established in France. Among those proselytes whose fame is calculated to give character to whatever secures their sanction, are mentioned M. de Blainville, Geoffroy St. Hilaire, and M. Boyer. During this period he published the following treatises:—*Sur la Folie; Sur la Phrenologie; Essai Philosophique sur la Nature Morale et Intellectuelle de l'Homme;* and *Du Cerveaux sous les Rapports Anatomiques.* In 1824 he married a lady, whose amiable qualities rendered him happy in domestic life, and whose talents made her an ardent leader of a sect of female phrenologists. She did not long enjoy the honours

due to the wife of the greatest mental philosopher of the age. She died in 1830.

In 1825 Dr. S. again visited England, and far different was his reception from that which he received a few years before. For six years he traversed the British dominions—lecturing to crowded, and constantly increasing audiences at London, Edinburgh, Dublin, Liverpool, &c. every where adding to the number of his adherents, until the science became too firmly established to be shaken. Our limits will not allow us to notice the names of those distinguished men who are now engaged in prosecuting this study with a diligence proportionate to its importance; such information may be best obtained by reference to the volumes of the highly entertaining journal published by the Edinburgh society. The example of this society induced the institution of another at Paris in 1831, which now publishes a monthly journal, and ranks among its members the names of many men of the highest celebrity, in medicine, law, and natural science; from among a numerous host we select those of Broussais, Andral, Jules Cloquet, Falret, Ferrus, Pinel, Rostan, and Sanson.

On the 20th of June, 1832, Dr. Spurzheim sailed from Havre for the United States, where his bright career was destined so suddenly to terminate. Of his reception in this country we need not speak. The impression produced by his arrival, is fresh in the memory of all. Led on by ardent enthusiasm in the propagation of truth, his unremitted and incautious exertions, before he became acclimated, produced a slow fever, rendered more serious by the constant excitement of a brain already irritated, and worn out by the energy of his own genius, he closed the volume of his labours on the 11th of November, 1832.

This biographical sketch is replete with interesting anecdote, and forms an admirable introduction, by impressing upon the reader the high importance of the subject.

Of the work itself, but little need be said—it must be read throughout to be duly appreciated, nor is it likely to be laid aside until it has been thus perused. The first section contains a general view of the physiognomical signs of the body, the face and the head, the various temperaments, and their influence, as well upon the mind as the person; the peculiarities of the different tribes and nations of men; and the dissimilarity of the sexes, physically and mentally considered. The chapter on the physiognomical signs of the head, commences with the mode of dividing the brain into the basilar and sincipital; the frontal and occipital regions; it defines the limits of the forehead, as considered phrenologically, and its subdivision into the regions of the perceptive, and the higher intellectual faculties. Thus prepared, the student is enabled to comprehend the general grouping of the instinctive, the moral, and the reasoning organs, and is freed from those misconceptions as to the real marks of an unusual development, which result from hearing the terms *bump* and *protuberance* so constantly employed by the ignorant in speaking of the organs. Indeed, he will be surprised to observe, how few particular organs are dwelt upon throughout the work—he should therefore be provided with a cast and reference to the numbers, if he is yet unacquainted with the anatomical position of the most important convolutions of the brain.

The views given in the second section are broad and general. Characters widely dissimilar are continually contrasted, not by a close analogy of each par-

ticular trait, but by considering the relative development of the whole mass of the instinctive, the moral, and the intellectual organs. The subjects are classed in chapters, each chapter containing characters strongly influenced by the predominance or the deficiency of one or more important organs. Each sketch is accompanied with an engraved likeness of the subject, the phrenological deductions being drawn from the likeness, and followed by a short and authentic biographical notice, so that the student is enabled to trace for himself the connexion between the physiognomonic indication and the actual conduct of the individual. The plates are chiefly from the Cabinet d'Estampes of the great Royal Library at Paris, and the historical matter from several biographical works of high standing and celebrity.

The following is the order of the chapters. 1st. Characters in relation to morality—*Caracalla contrasted with Zeno, Richelieu and Walsingham,* &c. 2d. Religious characters—*Priestly, Richard Price,* &c. 3d. Independent characters—*William of Nassau, Prince of Orange, Ramus,* &c. 4th. Ambitious characters—*Philip II. Catharine II.* &c. 5th. Gay characters—*Piron and Carlin,* &c. 6th. Timid and bold characters—*skulls of a timid woman and courageous man—Cicero and the Gladiator,* &c.

This work was to have been completed by the publication of a second volume upon "Practical Phrenology," which has the organs necessary to the display of the arts and sciences for its object—unfortunately this volume never appeared. The student will be obliged to seek elsewhere the knowledge to which this work is intended as an introduction, but long may we wait for the appearance of one capable of communicating it in the happy manner of Spurzheim.

As an introduction, we recommend it highly to every curious inquirer, and especially to medical men, for the intimate relations between the science of phrenology and several branches of the healing art, cannot escape the observation of any enlightened physician. R. C.

XVIII. *Lectures on the Diseases of the Urinary Organs.* By B. C. Brodie, F. R. S. Sergeant-Surgeon to the King, and Surgeon to St. George's Hospital.

C'est un métier que de faire un livre comme de faire une pendule—it is as much a trade to make a book as to make a clock, is a fact of which our transatlantic brethren seem to be fully apprized. Scarcely a week passes that we do not receive "something new," from the craftsmen of the book-making trade in London or Paris! When we come, however, to the examination of these "somethings new," we are often not a little astonished at recognising tricked out in a new suit of best becomes, and bowing again for a small share of our "distinguished consideration," an old friend, or a discarded good-for-nothing, whom we had long ago consigned either to a snug corner in our "dome of thought," or to the dusty top shelf of our sanctum.

The celebrated B. C. Brodie, Sergeant-Surgeon to the King, &c. &c. has, within a few months past, "made a book," out of his already published lectures on the diseases of the urinary organs! In a very short and very modest preface, he apologizes to the experienced surgeons for the want of novelty with which they will find his book replete, observing that it is—

"Composed of lectures addressed to students who required to be informed

on all points, and who would have profited but little by his instructions, if he had confined himself to the exposition of new views, and the detail of original observations."

We do not think the Sergeant-surgeon does himself justice in making this statement, for although the book is as evidently made up, and is as deficient in novelty as any one that was ever compressed within the two covers of a volume; yet he describes with so much accuracy morbid phenomena of the diseases of which he treats, and marks out with so much clearness and simplicity each successive step to be taken in their management, that we must confess we were not a little gratified and instructed by its perusal, and do not hesitate to recommend it not only to the notice of students, but likewise of experienced surgeons.

The work is divided into three sections. Part first is devoted to the consideration of the diseases of the urethra—under this head he includes strictures, some of the more trifling affections to which this canal is subject, and the treatment of retention of urine. He adheres to the old division of strictures into the "spasmodic and permanent," and gives a somewhat diffuse, though plain history of their causes, phenomena, and treatment.

The second part treats of the diseases of the bladder and prostate gland, and embraces nearly all the diseases to which these organs are obnoxious. Some exceedingly useful and practical remarks are to be met with in this chapter, though it contains nothing of sufficient novelty to demand particular notice.

The third part relates to urinary calculi, and comprehends the causes of their formation, their chemical analysis, and their treatment. It is, however, we think, more particularly calculated for the inexperienced surgeon, than for one of long experience in the science. As a specimen of the style of the work, we shall transcribe what is said on the employment of solvent injections, into the bladder, for the purpose of removing calculi. From a series of experiments which he instituted to test the value of this method of destroying the stone, our author is of opinion, that it may in some cases be resorted to with advantage. The mineral acids, according to him, undoubtedly exercise a powerful chemical action on calculi composed of the phosphates, much greater indeed than alkalies do on those which are composed of lithic acid; it is therefore in cases of phosphatic calculi, that we look for most benefit to accrue from the use of acid injections.

"It is now some years," says he, "since I began a series of experiments upon this subject. I injected into the bladder a solution of nitric acid in distilled water, in the proportion of one minim of the former to an ounce of the latter. As no inconvenience followed, I increased the quantity of nitric acid, until two minims, and sometimes two minims and a half, were contained in each ounce of the injection. The result was the same; not only the patients did not suffer, but where chronic inflammation of the bladder was present, they experienced considerable relief of all their symptoms; the desire to make water becoming less frequent, and, in particular, the secretion of the ropy adhesive mucus from the coats of the bladder being very much diminished, I next endeavoured to ascertain to what extent a solution of this strength was capable of acting on a calculus of the mixed phosphates. The change produced was sufficiently obvious, especially when the solution was made to pass over a calculus in a stream for a considerable time. It gradually diminished in size, and at last began to be broken down into minute fragments."

About this time an elderly gentleman consulted him for symptoms of stone in the bladder, complicated with a strictured urethra of many years standing. From the diseased state of the bladder, he did not think himself justified in recommending the usual operation to the patient. The calculus, from the matter discharged, (a viscid mucus, blended with small particles of phosphate of lime resembling mortar,) was manifestly composed of the phosphates, arising out of a diseased state of the bladder. Under these circumstances, and with the advice of Dr. Prout, he determined to try the experiment of injecting nitric acid into the bladder.

"For this purpose I procured the catheter which I now show you. It is made of the purest gold, which can be worked. It has a double channel, which are separated from each other by a longitudinal septum running the whole length of the instrument. Each channel terminates by a distinct tube at the handle, and has a separate eye, or opening, at the other end of the catheter. By means of this instrument, you will observe that a liquid may be injected into the bladder, entering it by one passage, and flowing out of it by the other, so that there may be a current through the bladder, without that organ being inconveniently distended. I had contrived a complicated apparatus for the purpose of making the injection, but I was afterwards led to prefer the simpler contrivance of an elastic gum bottle, having a stop-cock and an elastic gum tube attached to it. At first I washed out the bladder with some distilled water to get rid of the mucus which was lodged in it. Then I injected the solution of nitric acid very slowly, using the same liquid over and over again several times. Always after the operation was performed, the liquid which had been employed as an injection, was tested by the addition of a *highly concentrated* solution of pure ammonia; and it was always found, that, if the ammonia was added in a sufficient, but not too large a quantity, the phosphates were precipitated in abundance. The patient suffered no material inconvenience from this operation. It was continued sometimes for fifteen minutes, sometimes for half an hour, and repeated, according to circumstances, once in two, three, or four days. At last, in making water, the patient voided these two small calculi, composed of the phosphate of lime, with a small proportion of the triple phosphate. It was impossible to doubt that they had been acted on, and partly dissolved by the acid injection, and that they had, at last, come away by the urethra, in consequence of their having been thus reduced in size. For some time after this occurred, the patient was in a state of comparative ease. He had still symptoms of stricture of the urethra and diseased bladder, but he was free from the more urgent symptoms under which he had formerly laboured. By degrees, however, these symptoms began to recur, and I have no doubt, that there was a fresh formation of calculi produced chiefly, as was the case with the former ones, by the diseased state of the bladder. If he had remained in London, I should probably have been able to have given him some further relief, by repeating and continuing the use of the injection. But he went into the country, where, having been for a long time in a very bad state of health, he died, as I was informed, of some disease not immediately connected with that, on account of which I had been consulted."

From the observations which he has made since the occurrence of this case, Mr. B. feels himself justified in coming to the following conclusions:—

"1st. That where the mucous membrane is affected with chronic inflammation, the urine depositing a viscid, alkaline mucus, a most beneficial change may frequently be produced in the condition of the bladder by the injection of a weak solution of nitric acid into it.

"2d. That a calculus, composed externally of the phosphates, may be acted

on by this injection, so as to become gradually reduced in size, while it is still in the bladder of a living person.

"3d. That there is reason to believe that calculi, composed throughout of the mixed phosphates, such as are met with in some cases of diseased prostate gland and bladder, are capable of being entirely dissolved under this mode of treatment."

This problem of the solution of calculi by chemical agents, has occupied the minds of many individuals, not only at the present epoch, but from time immemorial. Practitioners of the present day, however, generally speaking, administer their remedies chiefly with a view to the correction of those particular diatheses or states of the constitution, on which the formation of calculus matter seems especially to depend, believing that the schemes for the dissolution of urinary calculi are undeserving of confidence. Many difficulties, without doubt, present themselves to the adoption of this project. In the first place it is almost impossible to discover the exact composition of a stone, while it is concealed in the bladder. Again, there is great danger of producing violent inflammation of the bladder from the direct application of so powerful an irritant as a mineral acid to its already irritated mucous surface; and lastly, a diseased state of the urethra or prostate gland would likewise prove a serious obstacle. An opinion, however, from such a man as Mr. Brodie, and that founded on experience, is certainly entitled to weight; the truth of what he asserts remains only to be proven by the experiments of others, and we hope that the attention of those best qualified from their situations in public institutions, and from their experience to judge of the utility of the plan, will be at once directed towards it. To conclude, we beg leave to repeat, that taken as a whole, the work is admirably suited to the young surgeon, from the practical remarks with which it abounds, and that it must prove exceedingly interesting from its style to the more experienced, though containing, it is true, not much novelty in matter.

T. D. M.

XIX. *Elementa Medicinæ Forensis, Politiæ Medicæ, et Hygienes; ad usum Subalpinorum.* Taurini, 1832. Vol. IV. 8vo.

Although the title page of this work does not bear the author's name, we learn from the dedication, that we are indebted for it to Professor Martini, of Turin, whose zeal and indefatigable industry in the promotion of the medical art, and its collateral branches are too well known to require any eulogy from us.

It may be perceived that this work embraces a wide field, and we must confess that we were at loss to understand in what manner the learned author could compress even the elements of the three distinct though closely allied sciences of which he treats, in the four small volumes before us. His own words will, however, better explain his views on this point than any thing we can say. "Longus usus me docuit, duo in studiosæ juventutis institutione fore pernecessaria: scilicet brevitatem, atque perspicuitatem." This plan has been closely adhered to throughout the work, so much so indeed, that we know of no work with the exception of the aphorisms of the Coan sage, in which the same quantity of information is conveyed in so condensed and yet so clear a form.

It is divided into four parts, each occupying a volume, viz. 1. Elements of forensic medicine. 2. Elements of forensic chemistry. 3. Elements of political medicine, and 4. Elements of hygiene. As this division is different from that generally adopted, the following definitions of these branches may be useful.

"Forensic medicine includes all questions in legal medicine, on which questions the healing art can throw any light." "Forensic chemistry includes all those questions in chemistry which may be called in to aid the laws." "Political medicine includes all those questions which have a bearing on the public health and morals." "Hygiene is that part of the medical art which has a peculiar reference to the preservation of health."

Although the author gives specious reasons for these classifications of the subjects on which he treats, we cannot agree with him in the necessity for these forced divisions of questions so intimately connected. The term medical jurisprudence as defined by Paris and Fonblanque, viz.

"A science by which medicine and its collateral branches are made subservient to the construction, elucidation and administration of the laws, and to the preservation of the public health," includes every thing that fairly comes within the field of medical observation, and the only subdivisions of it that are necessary, are into forensic medicine, including all questions to be solved in aid of the laws; and political medicine, comprehending a consideration of the policy and efficiency of laws and regulations enacted for the preservation of the public health, and physical well being of the community.

From the condensed character of Professor Martini's work, it will be impossible for us to enter into a consideration of its contents in detail, we shall merely attempt to give a general view of the manner in which he has treated the various questions with such observations as have occurred in turning over the pages.

The first part or that treating on forensic medicine is divided into nine chapters or books. The first has reference to the science generally, and the duties of a medical witness. The second is devoted to the consideration of the intricate subject of insanity, under which head the author includes many states of the body and mind which can scarcely be considered as appertaining to it, as hydrophobia, death by lightning and cold, &c. Book third is taken up with observations on a class of questions, which though they may become the subjects of legal investigation in Italy, can never occupy a court of justice in this country; these are miracles, demoniacs, soothsayers, &c. Book fourth treats on feigned or simulated diseases, or rather on simulation and dissimulation, the first of which is defined, to be the feigning of what does not exist; and the latter the concealment of what really exists. This chapter contains much valuable information, and is deserving of attention. The fifth book is on generation, and includes a consideration of those points which though they may become the subject of legal investigation, are not of a criminal nature. The sixth book is devoted to wounds and their consequences; and the seventh to poisons generally. In the eighth the author considers those crimes which have a reference to generation, as fœticide, &c. whilst the ninth treats of violent deaths from other causes than wounds or poisons, including also the subject of survivorship.

From the above abstract it will be perceived, that the author restricts the limits of forensic medicine very greatly, as compared to those allowed to it by English and American writers, and at the same time treats on subjects that ought not, and in this country never can become questions of judicial inquiry.

The second part as we have before stated, is devoted to forensic chemistry, which the learned Professor is of opinion constitutes a distinct science, and should not be considered as synonymous with toxicology, which is only one of its branches. He very justly observes, that it involves considerations of the most perplexing and difficult questions that can be presented to the medical witness, and that a mere acquaintance with the general principles of chemistry, is far from enabling a practitioner to come to a satisfactory conclusion as to the cause of those phenomena which present themselves in every case of poisoning; that he is correct in this opinion, cannot be denied, the records of our criminal courts are unfortunately crowded with reports of trials, showing the most lamentable discrepancies of opinion, and the grossest errors of medical witnesses, whose talents and standing in their profession, in other respects were of the highest order. This part of the work is divided into five chapters, and presents plans of treating this intricate subject which is novel to us, and deserves the attention of medical jurists. After the usual preliminary remarks on poisons generally, and their effects, the external characters and prominent chemical properties of each article are briefly but clearly described. It is, however, the third book or that on reägents, that we think confers the greatest value on this part of the work: taken as a whole, it is by far the most satisfactory account of the action of tests that we have met with, though in some of the details, the author has evidently committed some gross errors. As is observed in the preliminary observations, this portion of the work is so connected together, and each chapter is so dependent on those preceding and following it, as to render it difficult to consider it except as a whole. After giving a list of those reägents which are most generally employed in the detection of poisons by analysis, the author divides all poisonous substances into three great classes, viz. Solid, liquid and gaseous; these again are subdivided as follows. 1. Solid, into organic and inorganic; the solid inorganic, are still further separated into two classes; those which are white, gray, or whitish gray, and those which are yellow, green, red, blue or black. The organic solid poisons from two sections, namely; 1, immediate vegetable principles; 2, those containing other principles in addition.

Having thus marked out the great divisions, the author next proceeds to specify in what manner we are to ascertain whether the solid poison in question s organic or inorganic. This having been ascertained, the tests are to be applied, and the results compared with the tabular view given; these tables are so constructed that every chemical phenomenon produced in the investigation can be clearly appreciated, so that every step of the process, instead of being merely preliminary to others of more importance, is in itself a clue to the experimenter. This plan of verifying a poisonous substance, by commencing the research *ab initio*, and tracing through all its relations with other bodies, appears to be the best that has been devised. Much, however, will depend on the accuracy of the tables of the effects of reägents alluded to, for a single error in one of these will totally destroy the whole benefits to be derived from

the plan, and we are therefore sorry to find that Professor Martini has committed some most glaring errors as respects the colours of some precipitates.

The fourth book is on antidotes, the best of which the author most justly observes, is the elimination of the poisonous agent from the stomach, after this has been done, the proper antidote may be administered. A list of these is given, of the value of most of which there can be no doubt, there are others, however, admitted, which are worse than useless; thus the alkaline sulphurets, sugar and water, and powdered charcoal are given as antidotes for arsenious acid; when it is well known that no dependence can be placed on any one of them against this virulent substance.

The fifth book is devoted to the consideration of chemico-legal questions, not appertaining to toxicology; as the mode of verifying spots of blood, &c.

The third volume treats on political medicine, which as we have already stated, the author considers as distinct from hygiene, though we must confess we cannot perceive the difference, it is true that if we admit the extended limits he has assigned to it, there can be no doubt, that it could not be included in that science; thus the chapter on crimes and punishments certainly does not belong to hygiene, nor do we think does this subject appertain to political medicine.

As we have extended this article to a greater length than was intended, we will merely add that the volume on hygiene contains much valuable information, mingled, however, with some superstitious and contracted dogmas which are unworthy of the talents and standing of the author.

The work will amply repay an attentive perusal, and although parts of it are superfluous and defective, it is, as a whole, highly creditable to the author. A translation of the portion of it on forensic chemistry, with some additions and corrections would be a valuable addition to our medical literature.

R. E. G.

XX. *Pathological Anatomy. Illustrations of the Elementary Forms of Disease.* By Robert Carswell, M. D. Professor of Pathological Anatomy in the University of London, &c. &c. Fasciculus first, Tubercle. London, 1833.

Since the year 1674, when the first special treatise on pathological anatomy, written by Bartholin, made its appearance, the attention of the profession has been more or less directed to the investigation of this interesting science. The valuable works of Morgagni, Bichat, Broussais, Cruveilhier, Baillie, &c. bear ample testimony to the industry and talent with which the study has been prosecuted. Not deterred by this host of authorities, who have almost, as it were, established boundaries to pathological research, Dr. Carswell, Professor of Pathological Anatomy in the University of London, has within a few months past, ventured to commence the publication of his views of elementary disease, and judging from the specimen which we have seen, the work promises to prove as interesting and instructive as any one with which in modern times the science has been enriched. It will consist of twelve royal quarto fasciculi, a fasciculus to be issued every two months, until the whole is completed, each one of which will embrace remarks upon one or more diseases, accompanied by coloured lithographic plates of the same. The classification of his subjects seems to us to be peculiarly happy, and it is in this particular point that most

authors have laid themselves open to criticism. Although we have delineations, and accurate ones too, of almost every known morbid alteration, yet so little *system* has been observed in their arrangement, so many dissimilar diseases brought at one and the same time, before the eye of the student, that he becomes lost in the maze of *disease*, and but too often finds himself unable, after all his labour, to distinguish one morbid lesion from another! Dr. C. in order to avoid this confusion, treats of but one elementary lesion or morbid alteration at a time, and traces it in its several changes in various organs, for instance the first fasciculus, (the only one as yet published,) is dedicated to the delineation and description of tubercle; its location, colour, consistence, composition, origin, progress, and effects upon the organ in which it may arise, are all noticed, and with a fidelity to the facts developed by dissection, and a searching scrutiny into their relative value, that reflects the highest credit on Dr. C.'s talents, industry, and capacity for the execution of the truly arduous task which he has undertaken. Four coloured lithographic plates, each containing four or five drawings, exhibiting tubercle in several different organs, accompany this number. These are executed in a masterly style, and convey, generally speaking, correct and highly interesting views of the morbid appearances produced by this almost inscrutable disease. This work deserves, and will no doubt receive the patronage of the profession, and we do not hesitate to say, that in continuing it, as he has begun, Dr. C. will confer an everlasting benefit upon the community at large, and establish for himself the enviable name of a skilful and faithful pathologist. T. D. M.

XXI. *Elements of Chemical Philosophy on the Basis of Reid, Comprising the Rudiments of that Science, and the Requisite Experimental Illustrations, with plates and Diagrams.* By Thomas D. Mitchell, M. D. Professor of Chemistry and Pharmacy in the Medical College of Ohio, &c.

Dr. Mitchell has well remarked, in his preface, that the offer of an additional treatise on elementary chemistry, at this time, may seem a work of supererogation, and yet the reasons which he assigns for encountering critiscism on this head, are such as almost every lecturer on the subject, will pronounce to be valid. With the elaborate treatise of Professor Silliman, the American reprint of the last edition of Dr. Henry's copious work, and the more condensed and convenient work of Dr. Turner, which has already gone through four editions in this country, before us, we should be prepared to scrutinize closely a new compilation, were it not that the kindly feelings excited by an attempt to diffuse useful information through the western parts of our country, check, at the outset, such an examination as the nature of the case would otherwise suggest. In truth it requires all the effort of those feelings to examine with impartiality a work on the basis of the system, which we have conceived to be least adapted to students, and least complete of any of those which have appeared more recently in one language, and which always struck us as being a "practical chemistry"* only in name. The American editor has however much improved the work for the use of the student, and has made both additions and subtractions of a useful kind. The whole of the first part of the work Dr.

* Elements of Practical Chemistry, &c. By David B. Reid, &c. &c.

Mitchell is directly responsible for, as in part a compilation, and in part original. This contains a general account of chemical affinity, treats of light, heat, electricity, &c. and gives a brief account of the nomenclature in use in England and this country, and devotes a chapter to the discussion of specific gravity.

The treatment of the subject of affinity is plain, and though elementary, is, upon the whole satisfactory. Some of the details, however, we conceive to be erroneous, such as that the attraction of gravitation is the same force with cohesion, a force acting at *sensible* distances, and decreasing in the inverse ratio of the square of that distance, the same as a force acting only at *insensible* distances, and therefore decreasing in a high ratio of the distance; that ammonia is the only *possible* combination of nitrogen and hydrogen; that the ratio of one to one and a half in combinations stated in equivalents, will disappear in compounds in the progress of modern chemistry. It may be that we lay too great stress upon the necessity of giving the student clear views of the laws of definite proportions, and that little more than a page is required to state all that should be known on the subject. On the necessity for an *accurate* expression of those laws there cannot be two opinions. The *one* which our author gives is:—

"A striking feature in this view of combination, is that among the different uniting properties of the same bodies, there is an intimate and uniform relation, whereby the quantity of one of the two bodies which enter into a second combination, is a multiple, by a whole number of the quantity contained in the first combination."

The exceptions to such a statement are too numerous in the actual state of science to admit of its use, even if we adopt entirely the system of rejecting small fractional numbers. The atomic theory affords a strong ground for the rejection of the idea, based upon the reciprocal nature of the affinities of the particles of bodies. The cautiously accurate expression of this law, by the editor of the American edition of Turner's Chemistry, stands in such bold relief to the above, as to require merely to be quoted as the best commentary upon it.

"When one body B, combines in two or more proportions with another body A, the numbers representing the quantities of B, combined with the same quantity of A, are multiples by a whole number of some particular number; that is, contain some number a number of times without a remainder. The number so contained may be the same as the number representing the lowest proportion, or it may be different."

Information upon subjects of physics, (heat, light, &c.) is generally given in considerable detail in chemical works; we should not disapprove a contrary course, namely, one which would confine itself to such discussions only as are necessary for the elucidation of chemistry, properly so called, but we hold that in this latter case peculiar caution is required as to the entire accuracy of the information conveyed: a student thoroughly imbued with the subjects under discussion, may be able to allow for looseness of expression, or to correct inaccuracies of detail, but when the information is only general, he has no means of so doing. These remarks have a direct bearing upon the portion of Dr. Mitchell's work now under consideration, as the marginal queries which we have had occasion to make would testify; our limits must prevent our bringing forward many examples. The much dwelt-upon experiment with the concave mirrors to exhibit the reflexion of heat, is an instance in point.

"Substitute a lump of ice for the heated iron ball, and very soon the thermometer in the other focus will be affected, and its fluid will fall. Now, say some, this is proof that cold is a positive agent, and not the mere abstraction of heat. They contend, that the frigorific particles pass from the ice to the thermometer, and act on it, by a positive power. This, however, is a mistake: remove the ice from the focal point to a place midway between the mirrors, and the thermometer will not be affected; whereas, on the supposition of a positive frigorific agency, the reverse should occur."

Just such an experiment could be made, the mirrors not being near to each other, with the heated ball, and just the same reasoning used to show that heat is not a positive agent. But the deductions would be alike unwarranted by the experiment. Those who suppose *cold* to be a positive agent, trace it from the cold body to the adjacent mirror, from this by reflexion to the second mirror, by which it is converged upon the thermometer in the focus; and the experiment stated, plainly does not prove that such is not the case, neither would a similar one show that heat did not pursue the course just traced for *cold*. The reasoning does not touch the point, and the last and lately deceased advocate of the doctrine of *cold pulses* would have triumphed in such an examination of his theory.

We pass over the description of the mode of righting the walls of the Conservatoire des Arts, which if not accurate, answers all the purpose, and that of the scale of Wedgwood's pyrometer, the instrument having ceased to be one relied on for philosophical purposes. The following definition of conducting power is not so to be treated as a matter of indifference.

"All heated bodies seem to have a disposition to send out their caloric to other bodies; or rather this tendency to escape, seems to be the characteristic of caloric itself, and hence we have the term *conducting power*, and this property is exceedingly unequal in different substances, &c."

Again, the experiment given to show that water does *not* conduct heat, will when performed with the requisite nicety, not be attended with the results stated, and will show either that the vessel containing the water has *conducted* heat downwards, and then imparted it to the water, or that the liquid itself is a conductor, a result decisively proved by well-known experiments. But these few remarks must suffice for the chapter now before us.

The chapter on the nomenclature of chemistry, without going into detail, gives a view of that in use in England and this country, and which the professor has deviated from in more than one instance which we may notice in the sequel. For the early date at which the philosophical views of Dr. Mitchell* in relation to the non-existence of any principle which could exclusively be allowed to be *the* acidifying principle, he deserves credit.

The following directions are given in a brief exposition of the subject of specific gravity, for ascertaining the specific gravity of a body which is lighter, bulk for bulk, than water.

"Attach to the light body, by means of a fine thread, another body, sufficiently heavy to sink both in water; having previously taken the weight of the heavier solid in water, and of each in air, we are next to weigh them jointly in water, and from the difference between their weight in water and in air, we

* New York Med. Repos. 1812-13.

must subtract the difference between the weight of the heavy solid in air, and its weight in water. The remainder will indicate the weight of a quantity of water equal in bulk to the light body, and we can thus find its specific gravity in the way directed above."

The directions include one operation of weighing, and two of calculation, which are unnecessary; viz. weighing the heavy body in air, adding that weight to that of the light body, and then taking it from the sum.

We have now arrived at the "basis," more properly chemical, though avowedly less original than the portion which we have cursorily examined. The author has taken pains in most cases to assert the rights of his American brethren, and to notice their experiments particularly. Thus, the early experiments of Dr. Woodhouse on carbonic oxide, on the inflammable mixture resulting from the calcination of carbonate of potassa with soot are given; the oxy-hydrogen blow-pipe is attributed to its real inventor, and its merits properly enforced; the excellent method of preparing nitrogen given by Professor Emmett is referred to; the self-regulating reservoir for hydrogen of Dr. Hare is spoken of; the experiments of Dr. Bridges on the residuum from the preparation of oxygen from nitre are given, &c.

The details of operations and cuts of apparatus given by Dr. Reid are omitted in this edition of his work, but the useful diagrams for exhibiting combinations by weight and volume, and for indicating the results of complicated reäctions, which by the by we consider the best part of his work, are retained in the American edition. In the order of substances, oxygen and hydrogen are given first, their compounds are next noticed, then follows nitrogen, its compounds with oxygen, sulphur and its compounds with oxygen and hydrogen, selen*ium* and its compounds, phosphorus and compounds, carbon, boron and compounds, chlorine, iodine, &c. then the metals in orders, *ammonium* being included in the list; a brief chapter on animal chemistry, and one on analysis close the work. Vegetable substances are treated early in the stage of the work under the head of compounds of carbon and hydrogen. It would be obviously impossible to carry our readers over this ground in reasonable limits, and as the criticisms would bear on Dr. Reid oftener than upon Dr. Mitchell, the task is not one for which our readers would thank us. A few points in the original matter seem to require notice, one of them is the discussion of the question, whether atmospheric air is a chemical compound of nitrogen and oxygen, or a mere mixture of those gases. We quote—

"And here it may be affirmed, that in the operation of chemical attraction between any two bodies, an entire change of properties follows. What then are the properties of oxygen and nitrogen in a separate state, and what are the peculiarities of atmospheric air? If none of the essential and characteristic qualities of nitrogen are found in atmospheric air, then it follows that a chemical action has ensued, between it and oxygen, in the formation of common air. The leading feature of nitrogen is its unfitness for respiration and combustion; animals die when subjected to its influence, and lighted tapers are instantly extinguished. But atmospheric air is the grand element of life; and equally indispensable in the maintenance of ordinary combustion."

"There are also dissimilarities between oxygen gas and common air. The former is too stimulating to be constantly inhaled, while the latter is precisely adapted to the condition of the lungs in a healthy state. They differ moreover

in specific gravity, and in their powers to maintain combustion. It is plain to the most cursory observer, that the distinctive features of nitrogen and oxygen do not exist in atmospheric air."

"But it is said, that nitrogen and oxygen will be found detached from each other, in a tube which has been filled with common air, and closed perfectly tight, after some months have elapsed; and so also will mercury be separated from the oxygen with which it was combined in the form of oxyde, after the lapse of a given period; and yet no one, for this reason, denies that oxydes are chemical compounds."

The same train of argument might be used to show that any mixture of solids, liquids, or gases, was a chemical combination, for example, of sand and sugar, of carbonic acid and hydrogen. What can be meant at the present date by saying that nitrogen and oxygen confined in a tube will separate from each other? Have the experiments of Dalton, of Mitchell and Graham, on the diffusion of gases through each other gone for nothing? Or has not the author subjected himself to a just stricture for enforcing by such arguments, and by such statements, a theory, to which the circumstance, that it was supported by him in 1813, lends undue weight?

"These," says our author, "are the views that I have entertained on this subject for twenty years; for a fuller account of them, the reader is referred to the *Memoirs of the Columbian Society*, published at Philadelphia in the year 1813."

There are few opinions in a rapidly advancing science, which it would not be well to revise under the lights of new facts, oftener than once in twenty years.*

We will hastily notice a few of the marginal references made in looking over the remaining portion of the work.

An original remark on the chapter on nitric acid contains a criticism of Liebig's test for that acid by the sulphate of indigo, in the use of which we will promise our author success if he will substitute *muriatic* acid in lieu of the sulphuric acid which he adds to the mixture of the acid to be tested with the diluted sulphate of indigo.

The *oxygenated* nitric acid would have been well left out, notwithstanding its insertion by Dr. Reid; the discovery of the deutoxide of hydrogen prevents the necessity of our entrance into the labyrinth of highly oxygenated substances which the researches of Thenard, precedent to that discovery, had presented to him. In the compounds of carbon and hydrogen the remarkable fact, which bears so strongly on the philosophy of chemistry, is overlooked; namely, that their atomic constitution cannot with propriety be stated so as to reduce the numbers to their prime or equivalent ratios; thus, it seems that one atom of olefiant gas is not composed of one atom of carbon and one of hydrogen, but actually of two atoms of carbon and two of hydrogen. Admitting the superolefiant gas of Mr. Dalton, which has not been separated from mixture with the other carburets of hydrogen, both that gas and one discovered and examined by Mr. Faraday consist if the prime ratios of the equivalents be taken, of one equivalent of carbon and one of hydrogen, but are, more consistently, stated the

* In passing we object to the derivation of *eudiometer*, "literally, a *measurer of air*," and to that of ammonia, "from *Jupiter ammon*."

former to consist of three atoms of carbon and three of hydrogen, forming one atom of the gas, the latter of four atoms of carbon and four of hydrogen forming the compound atom.

The experiments of Mr. J. F. W. Johnston have satisfactorily shown that the black residuum from the preparation of cyanogen is *not* carbon, but consists of carbon and nitrogen, showing the necessity for the reëxamination of so many of what may be called the *traditional* statements of the science. Our author is here a little behind the *year*, as well as in some other matters, for example, in the statements relating to protoxide of chlorine which we conceive to have been satisfactorily proved, by the experiments of Soubeiran, to have no existence.

But we grow tedious with desultory notices, and will close by noting two points, in relation to which the task of fault-finding is not imposed. The first of these is an interesting statement of the assertions of Lavoisier and others, of the metallic nature of the bases of the alkalies and earths; the second, the method of treating the tests for the compounds of arsenic with oxygen. We quote from the first-mentioned:—

"An examination of the works on chemistry, will show a constant uniformity in ascribing all the credit of discovering the alkaline and earthy metals, to Sir Humphrey Davy; and I am quite willing to do full justice to the memory of that eminent and highly useful philosopher. It does appear to me, however, that injustice has been done to Lavoisier in this matter." "It will not be denied, that a part of the book called the *Elements of Chemistry*, was not written by Lavoisier; but the whole is so entirely devoted to the antiphlogistic system as to give the production a singleness of character, justifying the appellation so uniformly applied to it."

"In a note at the foot of page 213, the translator says, 'there are some experiments related in the Transactions of the Turin Academy, which give reason for suspecting that soda is a modification of magnesia; this latter substance, according to the experiments detailed by Baron Born, seems to be a metallic *oxyde*. From analogy, we may presume, that *potash* is also a metallic substance, in some hitherto unknown state of combination. We shall thus exclude all the alkalies from the class of simple, elementary substances.'"

"In page 217, Lavoisier thus writes"—

"It is extremely probable that barytes, which we have just arranged with the earths, is an oxyde; for in many experiments, it exhibits properties really approaching to those of metallic bodies. It is even possible, that all the substances we now call earths, may be only metallic oxydes, irreducible by any hitherto known process."

"A section is added by the translator, on the *metallic nature of the earths*, in which, after detailing the processes by which the metallic bases of lime, barytes, and magnesia, were repeatedly obtained; he uses the following language"—

"Should they be *eventually confirmed* by rigorous examination, a new light will be thrown on several of the most difficult parts of chemistry, in exact conformity with the predictions of Lavoisier, who supposes that those substances which have long been considered as primitive earths, are only metallic oxydes, and that their reduction has hitherto been prevented by the attraction which subsists between them and oxygen, being stronger than that between oxygen and carbon."

"To this account, Baron Born adds, that"—

"He expects soon to learn, that the silicious and argillaceous earths are

likewise metallic oxydes; and that in this case, the whole class of earths and stones will disappear from the mineral kingdom."

We have not spoken of the peculiar adaptation of this work to students of medicine, since it contains about as much as other general treatises, if not more, that is directly interesting to them; in this point there might we apprehend be considerable improvements in works intended specially for the student of medicine. B.

XXII. *Intorno alla Natura del Miasma Cholèroso Asiatico congetture di* B. M. Trasmesse alla Società Medico-Chirurgica di Berlino. Lucca, 1832.
Conjecture relative to the Nature of the Miasma productive of Asiatic Cholera. By B. M. &c.

The author of the little work whose title is prefixed to this article, Professor Mojon, of Genoa, occupies very deservedly a conspicuous station among the members of the medical profession in Italy, both as a profound and erudite pathologist and physiologist, and as a skilful physician. His reputation is not limited to his native country, but has extended abroad, where he is known as the author of many valuable publications, some of the principal of which have been translated into various languages, and widely circulated in France, Germany, and England. Occupying, during the dominion of Italy by the French, a professorial chair in the medical department of the University of Genoa, which chair, it may be proper to remark, he gained by concours among twenty-four competitors, he shared, soon after the transfer of Genoa to the Sardinian government, the fate of many of his most distinguished colleagues, and was dismissed on account of his political sentiments, from the school of which he was considered one of the brightest ornaments. But this event, far from lowering him in the estimation of his countrymen, the majority of whom are, as may be presumed, hostile to the present order of things, or abating his zeal for scientific pursuits, tended to render him perhaps more popular than he was before, and, as we may judge from the various physiological and practical works, with which he has enriched the medical literature of his country, to stimulate him to further efforts.

The last, and not the least interesting of those publications, is, we believe, the one at present before us. This essay was written, as we are informed, with a view to its being published at Genoa. Meeting, however, with opposition on the part of government, and not feeling disposed to modify his views, or expunge passages which were thought obnoxious, the author changed his plan, and addressed his manuscript to the Medico-Chirurgical Society of Berlin. A short time after, a copy of the work found its way to Lucca, and was there printed and published, without, however, as we learn from the editor himself, the sanction of the author.

This unwillingness on the part of the government of Genoa to allow the publication of an essay on a purely scientific subject, would, perhaps, have been calculated to surprise us, were we not fully aware of the difficulties which authors encounter in countries deprived of the liberty of the press, and of the ridiculous height to which opposition to the manifestation of independence of sentiment is carried in the territories of his Sardinian majesty. A very careful

examination of the present work has not enabled us to discover in it any thing calculated to prove offensive or dangerous to government, unless the decided opposition of the judicious and learned author to the doctrine of contagion, and to the measures based upon that doctrine—sanitary cordons, isolation, quarantines, &c. be regarded in that light. On these points the Sardinian, like many other governments in Europe, appears to be very resolute, and determined, by making use of its power over the press, to prevent the expression of views different from those which it has thought expedient, from various motives, to adopt. Happy would it be if the change of sentiment, relative to the mode of propagation of the disease, and to the sanitary measures necessary to be employed, which has taken place in the north of Europe, could be looked for on the other side of the Alps. Ignorant themselves of truth on the point in question, and imposing silence on those capable to enlighten them, the Italian governments and the Sardinian, the most despotic and ignorant of all, more particularly, are not likely to grant any modifications in their sanitary codes, and the disease, should it ever break out in Italy, may, in consequence, be expected to occasion the greatest havoc. If the offence of Dr. Mojon consists, as we suspect it does, in having expressed sentiments favourable to the opinion of the non-contagion of the cholera, he will no doubt find sympathy in France, in this country, and in England, where the doctrine he upholds is almost universally adopted,—where the liberty of the press is enjoyed by all classes of society,—where the fullest scope is allowed to the exercise of the intellectual faculties, and where scientific subjects are discussed without any reference to the partiality or dislike of government.

But to return from this digression. Dr. Mojon's essay has been translated into the French and German languages, and may thereby, independently of the claims it possesses to our attention from the high reputation of the author, be presumed to be worthy a notice in this Journal. Dr. Mojon may also, for another reason, be regarded as entitled to a hearing on the subject of cholera. He must not be classed among those numerous physicians of Italy and elsewhere, who have studied the etiology, pathology, and treatment of cholera in books, and presume to enlighten the rest of their professional brethren on those various points. So far from resting satisfied with information derived in this easy way, he left Genoa and repaired to Paris as soon as he learnt that the cholera had made its appearance there, and enjoyed the fullest opportunity to investigate the causes and nature of the disease in the numerous and crowded hospitals of that metropolis. Notwithstanding these various recommendations, however, we doubt whether he will make many proselytes in this or any other country, inasmuch as his object is to advocate a doctrine which has heretofore enjoyed but little popularity among the members of the medical profession—that the efficient cause of cholera consists in animalculæ floating in the atmosphere, and which, penetrating into the system through all the pores, situated on the internal and external surfaces, give rise to the symptoms of the disease. In upholding this doctrine, Dr. Mojon has not the pretension to claim credit for originality, aware as he is, that a similar view of the cause of cholera has already been advocated by several modern physicians, by Hahnemann, Lamotte, Neale, &c. His object is simply to add to the facts and arguments adduced by them, others which, in his opinion, are calculated to give additional weight to

the theory they defend; and we have no hesitation in saying, that, so far as we are able to judge, he has executed his task in a learned and ingenious manner.

In saying thus much, however, we do not wish to be understood as admitting, that Dr. Mojon has succeeded in making a convert of us. For although he may deserve the credit we have bestowed upon him, although he may have shown that the animalcular doctrine is as likely as not to be correct;—that it is entitled to at least as much respect as any other doctrine with which we are acquainted; we do not think that either he or any one else has as yet demonstrated its truth in a conclusive manner. In order that this should be effected it would be absolutely necessary to produce those insects; to render them appreciable to the senses. We fully agree with Dr. Mojon, that it is not proper to deny the existence of a thing on the mere ground that it has not been seen, and that we are not as yet conversant with all its characteristic properties. But at the same time we are decidedly of opinion, that in a question like the present, few individuals will feel disposed to admit the necessary agency of those insects from the mere circumstance, that by so doing they will be better able, than by any other theory, to explain the various phenomena presented by the malady. The facility which the hypothesis affords, entitles it, no doubt, to attention and respect. But it will not be deemed sufficient. Some positive proof of the existence of the animalcules is required, and should none be offered it will always be in the power of individuals to deny their agency, and to maintain that we have no evidence of the possibility of an epidemic of so wide spreading a character—the cases of which are characterized by so frightful and appalling a train of symptoms, arising from the ingestion of insects of so diminutive a size that their existence can only be inferred through the aid of analogy.

We are aware that Varro, Lucretius, Columella, Vitruvius, Kircher, Le Gendre, considered the plague as arising from animalcules—that Langius, Lancisi, Fabre, Linnæus, Paul Ricca, Moufflet, Scuderi, Crawford, applied the same doctrine to the explanation of the same disease, and of miasmatic fevers generally; that Hautmann, Plenitz, Desault, Rasori, Puccinotti, Targioni, Acerbi, &c. regarded contagious diseases as arising from the action of living organized creatures. But it may still be maintained, that this great array of names avails but little in support of the animalcular doctrine, because, distinguished as most of those individuals may be, they have after all done little else than lend their aid to the support of an hypothesis, and adduced no facts capable of proving satisfactorily the existence of the cause for which they contended.

Without admitting or rejecting therefore, the theory which Dr. Mojon has undertaken to defend, we proceed to state in as concise a manner as possible some of the facts and arguments he has collected in its favour.

1st. There are certain diseases incident to sheep, oxen and horses, of which the cause was formerly unknown, but which subsequent experience has shown to depend on the action of various kinds of insects that find their way into, and live and multiply in the viscera of those animals. Baron describes an epizootic disease which prevailed among the Gallinacea of Lombardy, in 1783, and which was finally discovered to depend on a similar cause. Many instances are on record of forest and other trees being destroyed in great and even extraordinary numbers, in various parts of Germany, England, &c. After giving rise to much contro-

versy, the cause of this mortality was finally ascertained to arise from other varieties of insects.

2d. The author describes the localities of that part of India where the disease is supposed to have originated; its soil, marshes, climate, &c. and thinks, that from the peculiar nature of the country, as well as from the great number of dead bodies allowed to putrify on the banks of the Ganges, there may be presumed to originate swarms of insects capable of acting as the exciting cause of the cholera, which he regards as an endemic of that country.

"If, as he remarks, we consider 1st, that in 1817, during two consecutive seasons, there reigned along the coast of the gulph of Bengal a very extraordinary atmospherical constitution, and that the weather, instead of being very warm and clear, was, at the commencement, cold and hazy; 2d, that there fell a great quantity of rain, at a period when there usually prevails considerable dryness; and, that from this circumstance there resulted inundations such as had not been observed for a long time before, along the Delta of the Ganges; 3d, that the rainy season was very warm, and the nights cold and windy; 4th, and lastly, that the crop of rice and of vegetables generally was, in that year, very small; if we have regard to all these circumstances, I say, it will no longer appear extraordinary that the miasma of the disease, which had heretofore been only endemic in those localities, should by these effects have acquired an unprecedented degree of development, and passed into other countries, where meeting with a combination of circumstances suitable to its development, it increased in force, and thence propagated itself as far as ourselves. No one is ignorant of the fact, that after heavy rains, thunderstorms and inundations, swarms of insects emigrate to immense distances; and that encountering circumstances favourable to their multiplication, they remain there for some time, and thence proceed to other places, causing in the inhabitants diseases of a peculiar character."

3d. The peculiarity manifested by the disease, of breaking out and raging extensively in climates of the most opposite character, and under the most diversified degrees of temperature, may be adduced in favour of the animalcular doctrine. We are not acquainted with any general cause of disease capable of prevailing under those very various circumstances, except the one in question; because insects are known to accommodate themselves to every climate, and to every temperature. But although the cholera has appeared in countries differing greatly in respect to climate; yet it is not less the fact, that it has generally been found to increase in summer and decrease in winter. In other words, it is influenced in its progress by those circumstances which tend to favour the multiplication of insects. It is also modified by changes of temperature which take place in any place during the time of its prevalence—as for example when night rains are succeeded by intense heat during the day. Now, we all know, that insects increase or diminish in number, that the virulence of their action upon animals is modified, in the same season, according to the degree of atmospherical temperature, and that they greatly multiply and become more offensive in weather such as we have described. The peculiar property of the disease to attack distant places, and leave the intermediate spaces free, is more easily accounted for by the supposed agency of insects, than by any other cause; for they are known to stop only in places where they discover the existence of circumstances requisite for their multiplication; and as these circumstances are generally met with in large and populous towns, and especially in the habitations of the poor and needy, who are usually regardless of the precepts of

hygiene, live in the lowest, least ventilated, and most filthy situations, we find that the disease prevails there with most intensity, while other places are entirely exempted, or at least suffer in a less violent degree.

4th. It has generally been observed in those places where the cholera reigned in the epidemic form, that previous to its appearance, the atmosphere was hazy, though the sky remained cloudless, and that the sun appeared as if deprived of its usual brilliancy. The explanation of this phenomenon is probably to be derived from large swarms of insects floating in the air, and preventing the rays of the sun from producing their ordinary degree of light.

Writers and observers of great merit have viewed the large number of insects they saw in many places where the cholera has reigned epidemically, as the precursors of the disease. That such swarms of insects have been found to exist in many places—that they have continued to do so for some time to an extraordinary extent, are facts too well authenticated to be called in question; and that there may exist swarms of other insects, which though too small to be seen by means of the unassisted eye, or with aid of the instruments at present in use, are yet capable of occasioning by their action on the vital organs a variety of diseases, is not so preposterous a supposition as some might perhaps believe. There appeared two years ago, in Sardinia, a black cloud which, during a few hours, enveloped the whole island. Through the effect of that cloud the crop of wheat was completely destroyed; every grain being charred and deteriorated. By many it was supposed that this cloud or fog which was carried to the island by the south wind, was formed like those which sometimes spread over the plains of Africa, and destroy the whole vegetation by an immense mass of very minute insects. Writers talk of a yellow dust, and of fetid clouds which are observed in countries where the cholera prevails, and Herrmann is of opinion that the atmosphere of places visited by the pestilence contains a substance which is deposited on cold surfaces, and has the appearance of animal mucus. It has also been shown, that during epidemics of cholera, alimentary substances take on the putrefactive process, much sooner than under any other circumstances. Such, at least, has been affirmed to be the case by Capplez, Lamoth and Coulier.

5th. The prophylactic treatment of cholera may serve to confirm the truth of the animalcular doctrine. To live with sobriety, to guard against atmospherical vicissitudes, to keep the body clean; and to make use of strong odours, as those of camphor, cajeput oil or garlic, and to wash the hands and face with vinegar and water, or a solution of the chlorate of lime, are the means recommended. What other measures could be resorted to for the purpose of guarding against the effects of insects floating in the atmosphere, or against verminous affections generally.

6th. The symptoms of cholera bear a considerable analogy to those of the last mentioned diseases; with this difference, however, that the cold and shrivelled appearance of the surface, the blueness of the skin, and the peculiar changes in the blood, which are so generally found to occur in cholera, are not met with in the others. The absence of those symptoms probably depend on the circumstance, that in cholera the insects which give rise to the disease, penetrate along the trachea and bronchia into the lungs, and derange the pul-

monary functions to such a degree, that the process of hematosis is not effected in a suitable manner; the oxygenation of the blood is not complete, and the animal heat remains deficient; while in verminous affections, the exciting cause being limited to the gastro-enteritic system, does not produce the morbid alterations depending on the derangement of the respiratory functions. The dark colour of the blood in cholera, is not caused by the abundant secretion of sero-mucous fluid which takes place in that disease; for in other complaints, evacuations equally profuse of a similar substance, take place without being followed by a corresponding change in the blood. Morgagni states, that he lost sixteen pounds of serous fluid in the course of twelve hours; and yet his blood is not said to have undergone the alterations noticed in cholera.

7th. The treatment found most appropriate in cholera, lends support to the doctrine which ascribes this disease to the action of minute insects. Calomel, tartar emetic, opium, cajeput oil, spirit of turpentine, ether, camphor, hydrocyanic acid, ice, castor oil, are regarded as heroic anthelmintic remedies, and have all been employed with more or less success in cholera. If notwithstanding the use of these remedies, the cure is not effected, this must be attributed to some peculiarity of constitution or temperament in the individual affected, to the intensity of the attack, or to other circumstances depending on the nature of the climate, localities, &c. Hence leeches, the lancet, warm, dry and irritating frictions, blisters, sinapisms, baths, and many other external remedies do not succeed in cholera, otherwise than by remedying to the secondary symptoms of complication, which may occur during the course of an attack, and not by removing the efficient cause of the disease, which appears to be the result of an irritation, and not of inflammation.

8th. The appearances discovered on dissection may also be adduced in favour of the theory in question. In many cases, no changes from the healthy condition, sufficient to account for the symptoms, can be discovered. The redness which is sometimes noticed in the gastro-enteritic mucous membrane, is the result of a preëxisting chronic inflammation, or indicates a purely congestive state of the vessels. The most constant phenomenon observed, consists of minute spots situated on the lining membrane of the alimentary tube, of the tongue, throat, &c. and imparting to the finger a sensation analogous to that produced by grains of sand. These spots were discovered by Jahrn, of Berlin, who examined them with the aid of the microscope, to be vesicular, and filled with a limpid fluid. It is very probable that these minute eminences are produced by choleriferous insects, in the same way as those in which are found the *Acarus scabiei.* Professor Germac has ascertained, from microscopic injections of the vessels of the intestinal coats, that the substance employed, penetrates into the glands of Brunner and Peyer, but never into the choleric globules. By scraping off, with the back of a scalpel, the mucus adhering to the internal surface of the intestines, we discover the above-mentioned glands. They are of a pale-red colour, a circumstance which causes them to be easily distinguished from the choleric globules, as these are always of a deep red hue, analogous to that observed on skin deprived of its cuticle by means of a freshly applied blister.

9th. Dr. Martin, of Vienna, affirms, that he has observed on the skin of several choleric patients, miliary eminences analogous to those found on the intes-

tinal mucous membrane. Individuals placed under the influence of the choleric miasma, have sometimes become affected with pruritus, redness of the hands and face, and very minute vesicles of the same parts. Facts of this description were noticed at the Hospital St. Louis, of Paris, by Alibert, Duchesne, and Poisseux. At Warsaw, a cutaneous disease was observed by Hochler, and received from him the denomination, of *Herpes zoster*, and *crittenum tuberosum*. Romberg, Hoysselden, Rayer, and Cullerier, think that the cutaneous eruption of cholera bears analogy to the measles. Alibert found that the eruption occurs sometimes at the commencement, and in other instances at the termination of the disease. The granules, he states, are round, of limited elevation, and of the size of very small millet seeds. They are highly prurigenous; are more frequently found on the chest, face, and superior extremities, and are common among females. These granules are probably produced by the same cause as those found on the internal surfaces; and if they are not as frequently observed on the skin as on the mucous membranes, the difference must be ascribed to the delicacy of structure of the latter, and the comparative toughness of the former.

10th. The sweating sickness which prevailed at the same time with cholera in several towns of France, evidently depended on the same cause as the latter. The eruption which, in cholera, generally appears on the internal surface, manifested itself in the other disease on the skin, in consequence of the irritation produced on that membrane by the insects, being rendered greater by the softened condition of the latter, occasioned by the perspiration with which the patients were affected. In cholera, the formation of the pustules, and the concentration of the sero-mucous fluids take place on the internal surface, whence arise the vomiting, diarrhœa, dry skin, &c. In the sweating sickness, on the contrary, the movement of the fluids is centrifugal, whence result the profuse perspiration and other symptoms which characterize that disease.

We have now offered an outline of Dr. Mojon's views relative to the cause of cholera, and stated briefly the facts and arguments by which he endeavours to sustain them. We ought, perhaps, next to offer his sentiments on the subject of quarantines, sanitary cordons, &c. But by so doing, we should extend this article much beyond its proper limits. Besides, we have already mentioned his opposition to the doctrine of contagion; and this taken in conjunction with his views relative to the cause of cholera, will be sufficient to indicate, that in his opinion, those precautionary measures are not entitled to any confidence.

The following remarks, however, in consequence of their having a bearing on the doctrine he upholds, may, with propriety, be introduced in this place.

"The supporters of the doctrine which refers all contagions to organic living creatures of the family of insects, or to very minute parasyte worms, will probably refuse to adopt my opinion respecting the non contagious character of the Asiatic cholera. But I wish them to remark, that my sentiment differs from theirs only in this, that cholera appears to me to arise from the action of winged monads, transmissible or transportable, by means of the atmosphere, to very great distances; while the insects which produce diseases of a strictly contagious character are not supplied with wings, and are consequently incapable of being transported except by means of solid bodies, to which they attach themselves, and through the medium of which they can transmit the contagion. Admitting this, we shall be led to regard miasmatic diseases as the effect of winged insects, and non-miasmatic maladies as the result of other insects destitute of wings. The first require, in cities, precautionary measures of an hygi-

enic character only, while the second call for quarantines, sanitary cordons on the frontiers, isolation," &c.

We need hardly remark, that the arguments adduced by Dr. Mojon are conjectural, and that though they may, to a certain extent, lend assistance to the establishment of the animalcular doctrine, they do not place it beyond the reach of doubt. Nor can we say much more of many of his facts. Some of them do not appear to be sufficiently well-authenticated to merit the confidence he bestows upon them; others are merely conjectural, or have been contradicted by subsequent experience; while others again have a very slight bearing on, or a very distant analogy with, the question under consideration. Those which relate to the prophylactic and medical treatments of cholera must be viewed as particularly objectionable; because experience has taught us to place greater reliance on the means he represents as only useful to combat secondary symptoms, and to reject most of those on which he is disposed to depend for the treatment of the disease, or for guarding against its attack. The deduction drawn from the greater disposition, in alimentary substances, to assume the putrefactive process, is of no avail, because the fact has been disproved by subsequent experiments. And as regards that drawn from the diseases of animals and trees being produced by insects, it may be remarked, that in all the instances of the kind which are on record, the presence of the latter was *proved*, by ocular demonstration, not inferred, to have been the cause of the mischief; and until an equally satisfactory proof of their existence in the atmosphere during the prevalence of cholera is offered, their agency in the production of that disease may admit of some doubt.

Notwithstanding this, however, we must once more express a favourable opinion of the industry, ingenuity, and taste displayed by the author in the collection of his materials and the preparation of the present essay—of the great learning he has manifested, and of the variety of interesting information he has embodied in a narrow compass. If ever the animalcular doctrine becomes predominant, Dr. Mojon may justly pride himself on having greatly contributed to that result. We have said, that so far as we are able to judge, the doctrine in question has not yet been proved to be entitled to the entire confidence of the profession. But while saying this, we repeat, that we are far from joining in sentiment with those who regard it as merely fanciful, and even as absurd and unworthy of notice. Unfortunately no theory heretofore proposed to account for the production and phenomena of cholera can be regarded as free from objections, and to the partisans of one doctrine, the others appear just as fanciful and ridiculous as the animalcular theory may appear to its opponents. A careful examination of those various theories will, we have no doubt, show the correctness of Dr. Mojon's opinion; an opinion which by the way has also been expressed by a distinguished physician of this country, Professor Drake of Cincinnati, that the animalcular theory will serve to explain several points in the history of the epidemic, quite as successfully as, if not better than, any of the more generally received ones. This circumstance, though it may not be sufficient to insure to the doctrine in question a preference over every other, must necessarily, and independently of the fact that it is supported by several distinguished writers, entitle it to great respect in the mind of every reasonable and unprejudiced physician. L.

XXIII. *Pétition Adressée a la Chambre des Députés.* Par N. Chervin, Membre Titulaire de l'Académie Royale de Médecine, à l'effet d'obtenir que les résultats de l'enquête officielle que le Gouvernement a fait faire aux Etats-Unis d'Amérique, sur la conduite de ce médecin, sur son caractère moral et sur la question de la contagion ou de la non-contagion de la fièvre jaune, soient publiés aux frais de l'administration, ainsi que les lettres ministérielles qui ont provoqué cette enquête; et surtout pour appeler l'attention de la Chambre sur la nécéssité d'une prompte réforme dans notre système et notre législation sanitaires; Suivie des Pièces a L'appui, et du Rapport fait a la Chambre, par M. De Montepin. Paris, 1833.

The present volume, which we have recently received, affords another proof of the untiring perseverance of the author, in the prosecution of a point to which he has already devoted a large portion of his life, and sacrificed his fortune. It shows the violent opposition which truth has often to encounter, in quarters where it is least to be expected, and of the extraordinary, we had almost said reprehensible means to which men of honourable character and standing have sometimes recourse for the purpose of securing the success of their own views, or baffling the efforts of their opponents; though those efforts may have for their object the predominance of an opinion founded on the most indisputable facts—the abolishment of restrictions established in times of ignorance and arbitrary rule, and as a natural consequence the welfare of mankind generally. With Mr. Chervin's former writings, with the vastness of his researches, the conscientious manner in which he conducted them, and the difficulties he has had to encounter in France, from some interested individuals, as well as from the government—itself interested in upholding the doctrine of contagion, we do not intend to occupy our readers, presuming as we do, that they are for the most part already acquainted with them through the medium of this journal, and of other publications. Our object is merely to call attention to the unhandsome manner in which the labours, sacrifices and zeal of that eminent physician have been rewarded by the government of July, from the members of which a more liberal and honourable conduct might very naturally have been expected.

Overwhelmed by the innumerable and unanswerable facts, and the force of the arguments adduced against the doctrine of contagion and the sanitary measures based upon it, by Mr. Chervin and other physicians; refuted on every point, and fearing lest they not only should lose the sanction of the public, as they had already lost that of the profession generally, but be soon deprived, if the views of their opponents prevailed, of the lucrative offices they held, the partisans of contagion and of the quarantine system, devised a means which they considered, no doubt, as their last resort, and flattered themselves would turn the cards completely against the formidable champion of non-contagion, reduce him to silence, and thereby insure to themselves a complete triumph. This was no more nor less than to impugn, if possible, the veracity and moral character of Dr. Chervin, by appealing to his acquaintances in this country, and to collect further documents in the hope that they might be opposed to those he had obtained, and be calculated to neutralize, if not to destroy completely, the effects produced al-

ready by, or that were naturally to be expected from the latter. With this view, the government of Charles X. directed the consuls residing in the United States to collect the testimony of physicians individually, and of medical societies on those various points. This was immediately attended to. The reports of these officers were forwarded in due time, but their nature, their arrival in France, and the very circumstance of the inquest having been made, would probably have remained for ever unknown to Dr. C. or his friends, had not the medical society of New Orleans ordered a copy of the report presented to the consul of that city, to be forwarded to that gentleman; and had not copies of two letters addressed to the government by the consul of New York been procured in this place, and sent to him with full authority to make use of them in the way he should judge to be most advantageous.

When at last the existence of those documents was thus ascertained, Dr. C. could not help being tranquillized both as regards the doctrine which he so ably and triumphantly defends, and his own reputation. So far indeed from having reason to apprehend any injury from the result of the inquiries that had been made in this country, the few documents handed to him were of a nature to make him exult, and the silence that had been, and continued to be, preserved by government, relatively to the inquiry and the reports received, plainly indicated that nothing had been learnt, calculated to impeach his veracity, or capable of being made use of in favour of the doctrine of contagion. Fearing, however, lest the knowledge of such an inquiry having been set on foot in their official capacity by the consuls of France, might lead his friends and the profession at large in the United States to conclude, that his moral character was not held in high esteem in his own country, and being persuaded, from such of the documents forwarded to government as were placed in his hands and from other circumstances, that the publication of the whole series would tend to confirm the correctness of the views he had so long sustained, Dr. Chervin made several applications to that effect to the ministers of Commerce and of the Interior; but to no purpose. The publication of the documents was refused, on the ground of want of funds, of uselessness, of inexpediency, of fear to appear to lean on one side of the question, &c. A correspondence arose on that subject, between the ministers and Dr. Chervin, by whom all the reasons alleged by the former were completely refuted, and the expenses offered to be defrayed out of his own funds. Notwithstanding all his efforts, however, the ministers persisted in their refusal, and Dr. Chervin had no alternative left than to give up the affair, or to claim redress from the chamber of deputies. As might be presumed, from the known firmness of his character, he preferred the latter course, and consequently drew up a petition, which met with better success than his opponents had probably anticipated.

In this petition, which it would be impossible for us to analyze minutely in this place, Dr. Chervin shows very plainly, that the object of government in withholding the documents in question, was to avoid the impression in favour of non-contagion which they were likely to produce in the minds of the public; that the fear of appearing to lean in favour of one doctrine more than another, was a paltry excuse, inasmuch as government has always lent its aid to the contagionists—that the assertion of want of funds was ridiculous and unfounded; that there was no reason for keeping the results of the inquiry concealed; and that

such of those documents as relate to the contagious or non-contagious character of the yellow fever—to his conduct while in this country, and to his moral standing being of a nature calculated to hasten very powerfully the solution of the question in debate, should, for that reason, and independently of other considerations founded on a sense of justice towards himself, be made public with the least delay possible.

But Dr. C. does not limit his demand to the publication of those documents,—he endeavours to prove to the chamber the necessity of a prompt reform in the sanitary system and legislation of France. The portion of his petition appropriated to this subject, contains a very strong body of facts and of arguments in favour of such a reform and in opposition to the system at present in operation, and would be entitled to great attention in every country where quarantines are resorted to for preservation from diseases really, or supposed to be, contagious. After remarking, that the diseases against the importation of which sanitary measures are adopted in France are small-pox, typhus, leprosy, cholera, yellow fever and plague, he shows the inutility of the measures adopted in reference to some of these, and their inadequacy in reference to others. Admitting the contagious character of small-pox in every case, and of typhus under certain circumstances, Dr. Chervin remarks, that vaccination should be made obligatory on every individual, and that when this is effected, there will be no necessity for quarantining vessels containing persons labouring under the former of those diseases; and that the extension of typhus is much more effectually prevented by disseminating the patients, and paying due regard to cleanliness and ventilation, than by seclusion and isolation. The contagious character of leprosy he very properly denies, and concludes, that so far as relates to that disease, the sanitary system at present in force in France, can be of no sort of utility. He shows that in its application to spasmodic cholera, the same system can be of no avail, inasmuch as the disease is not proved to be contagious, or at least has heretofore baffled all attempts to arrest its progress by means of quarantines, isolation, &c. As regards the yellow fever, Dr. Chervin is of opinion, that that disease, though governed by very different laws from cholera, is as evidently refractory as the latter to the means of seclusion employed with the view of preventing its extension, and hence thinks that the government, in order to convince itself of this fact, should direct an examination to be made of all the facts, for and against, which the science possesses on that subject. He remarks, that the question of the contagious and non-contagious character of the plague is not yet settled, though the majority of European physicians, who have seen the disease, incline to the opinion that it is contagious and that in the uncertainty it is better to adopt precautionary measures. Dr. C. while joining them in that sentiment, thinks that it is necessary to remove that state of uncertainty and to become enlightened on the point in debate. He states, that the opinion of the contagious nature of the yellow fever was long predominant, and yet has ultimately been proved to be totally unfounded. For the purpose of ascertaining the truth on that point, he suggests the propriety of resorting to experiments, in some of the lazarettos of France, with cloths or other articles procured for that purpose from the Levant, and offers to submit, himself, to any of the trials that may be deemed necessary for that purpose.

He demonstrates the danger resulting from the system actually in force—the

inconveniences and expenses which the latter occasions to individuals concerned—the loss it occasions to commerce, and the increase of expense it causes to the state. He relates some of the heart-rending scenes witnessed in times of epidemics in this and other countries, and enumerates the baneful effects it occasions by causing consternation in the minds of the people, &c. The system of sequestration increases the mortality, by forcing people to dwell in an unwholesome and infected atmosphere, who might remain free from the disease, or recover more easily, if they were allowed to breathe a purer air; and it has but too often happened, that the authorities of a place have, while endeavouring to prevent contagion by lazarettos, sanitary cordons, &c. neglected the removal of local causes of insalubrity. Dr. Chervin shows the inutility of sanitary cordons and quarantines resulting from the ease with which they are eluded, and terminates by remarking, that the sanitary law of the 3d of March, 1822, inflicts capital punishment for different infractions of it, and that this severity could only be justified by a positive demonstration of the danger to which the violation of that law could expose society. But as there is great doubts respecting the reality of such dangers, it behooves the government to direct such experiments to be made, as may be required for arriving at a satisfactory conclusion on the subject.

This petition, which was presented to the chamber during the present session, was reported upon in the month of March. After giving an abstract of its contents, the reporter concluded by advising the reference of both sections to the minister, which amounts to nearly the same thing as ordering him to attend to the demands of the petitioner. To this proposition the chamber assented, so that Dr. Chervin may be considered as having gained his suite against the ministry and the contagionists. Whether or not the documents to which we have alluded will be published; whether or not the experiments recommended will be undertaken, matters not. The country will learn, from what has transpired, that the French government caused an official inquiry to be made in this country respecting the conduct and moral character of Dr. C. and the question of the mode of propagation of the yellow fever; and that the results of that inquiry has been entirely favourable to that gentleman and to the opinion he defends.

We cannot terminate this short notice without offering our sincere congratulations to Dr. C. on the results of a discussion which cannot fail to exercise a beneficial influence, by promoting the predominance of the doctrine he upholds, and causing, thereby, the abandonment of sanitary measures, which occasion incalculable detriment to commerce, and much vexation and expense to individuals, without giving rise to the least compensating advantage.

We must also congratulate the chamber of deputies for rendering justice to an honest, enlightened, and zealous individual, whose whole life may be regarded as one continued series of sacrifices and labours in the cause of science and humanity, and who heretofore has experienced from the government of his country an opposition and a treatment worthy of the darker ages, but little to have been expected in the nineteenth century, from the executive of a free, enlightened, and generous people;—whose publications have already served to lessen the expenditures of the country by proving the uselessness of the lazarettos which were about being erected for the purpose of shutting out the yellow fever, and by causing them to be abandoned; and who, if we except the premium he received

from the Academy of Sciences;—his election at the Academy of Medicine—on both of which occasions he had to contend against the opposition of government; the cross of the legion of honour which he was presented with on the occasion of his being sent as one of the French commissioners to investigate the fever of Gibraltar in 1828; has received no return for the many and valuable services he has rendered his country and the world at large. Dr. Chervin is not perhaps destined to enjoy personally the gratitude of France; if so, he may confidently appeal to posterity, by whom full justice cannot fail to be rendered to him. "Truth like fruit must have time to ripen," and it may yet be long before the ruling powers there will be so far overruled by public opinion on the subject, as to abandon the useless system which weighs so heavily on commerce and on private individuals. Even in this country, where the minds of the medical profession is almost unanimously made up respecting the non-contagious character of the yellow fever; where government can have no interest in upholding the contrary opinion, and where every intelligent and well-informed individual must perceive the inadequacy of the present system—supposing the disease to be really contagious, we find that not only merchandise and vessels are quarantined, but that individuals themselves, whether they are affected with the fever, or have had it recently, or have only come from an infected district, are subjected to the same measures. If such a useless and even barbarous law exists here, it is not astonishing that it should be difficult to abolish in France, where few physicians have seen the disease, and become conversant, from personal observation, with its mode of origin and propagation; where public opinion is very far from being settled on the subject, and where the government is ever ready to defend any system which allows it the management of more public money, and confers upon it more power than it would otherwise possess. Already, however, a change has been effected in France—thanks, in great measure, to the labours of Dr. Chervin; the number of contagionists amongst physicians has greatly diminished; and the two first learned bodies in the country have shown that they, at least, appreciated the extent of the services he has rendered. The refusals on the part of the chamber to appropriate funds for the construction of additional lazarettos, and the recent vote of that body in reference to the petition before us, plainly indicates a diminished faith in the doctrine of contagion. Public opinion is beginning to be enlightened, and there cannot be the least doubt, that the time will come when the government will be compelled to cease its foolish and ill-founded opposition to the doctrine of non-contagion, and when Dr. Chervin's services will no longer be undervalued and sacrificed to the interest of a few flatterers and office-holders. L.

XXIV. *The Cyclopædia of Practical Medicine and Surgery, a Digest of Medical Literature.* Edited by Isaac Hays, M. D. Part I. Philadelphia, Carey, Lea & Blanchard. July, 1833.

Since the completion of the celebrated *Dictionnaire des Sciences Medicales*, medical dictionaries appear to have become quite popular with the profession in Europe. France has given birth to at least four or five, Germany to two or more, and England to an equal number. The Cyclopædia of Practical Medicine and Surgery, part first of which appeared a few weeks since, is the only publi-

cation of a similar character that has been attempted in this country. It has been commenced however under the most favourable auspices, with a list of contributors which affords a sufficient guarantee of the able manner in which the work will be conducted.

Availing themselves of the admirable exemplars presented to them in the European medical dictionaries, in preparing which the talents of some of the most distinguished medical men in France, Germany, and England, have been engaged, and of the ample materials furnished by the medical journals and other publications of this country in relation to the diseases peculiar to the several sections of the United States, and the treatment that has been found most successful in their removal, the editors of the Cyclopædia, whose talents and industry are well known, cannot fail to produce a work, equal to any that has appeared abroad, and in every point of view highly acceptable to the medical profession in America.

Works of this kind, by presenting a condensed view of the actual state of the medical sciences, both at home and abroad, embracing a vast fund of important information, collected from a thousand different sources, many of them difficult of access to, or perhaps even entirely beyond the reach of a large number of the profession, and in a form which, while it facilitates a reference to any particular subject, places the work, in consequence of its cheapness, within the reach of all, constitute a most important and valuable portion of the library of two-thirds of our practising physicians. It is in itself, when well-conducted, a complete "Library of the Medical Sciences."

Numerous, and a few, we confess, very serious objections, may be presented to all works of this class. These objections we feel no disposition, on the present occasion, to examine, either with the view of refuting them, or even weakening their force. Taking the profession as a body, such as we know it to exist in this country, however much we might desire that all its members should, in their search after medical knowledge, look to higher and more satisfactory sources, than such as are presented by the articles of a dictionary, or by any compendium however well executed, we must be convinced, that with the majority this is impossible. Hence every well-devised means for placing within the reach of these that kind of information upon the possession of which depends essentially their own usefulness, and the safety of the sick under their care, is a benefit conferred not merely upon this portion of the profession, but upon the public at large. One of the very best means that has as yet been devised to effect this important object, next to the periodical journals devoted exclusively to the medical sciences, is unquestionably such a work as the one announced at the head of this article. Through its pages the reader is made acquainted with all that is now known in relation to any given subject, up to the period of its publication, while the journals of the day keep him fully informed of each subsequent fact or improvement.

The first part of the Cyclopædia of Practical Medicine and Surgery contains one hundred and eight closely printed octavo pages. The principal subjects comprised in which, are *abdomen, abies, abortion,* and *abscess.* In the article abdomen are considered the general, surgical, and abnormal anatomy of that cavity; its physiology and general pathology; wounds, contusions, and ruptures of its parietes,

abnormal adhesions between different portions of its internal surface; effusions, foreign and loose bodies and tumours within it; encysted dropsy, phlegmon, abscess and fistulæ, &c. This article occupies nearly eighty-two pages, and is from the pens of Drs. Geddings, Hays, and Coates. In all its parts the article abdomen presents a very favourable indication of the manner in which the work will be conducted throughout. The same remark may be made in reference to the article abies by Dr. Wood. The article abortion, so far as regards its causes, symptoms, treatment, and prevention, is from the pen of Dr. Dewees, while the medico-legal consideration of the same subject is by Dr. R. E. Griffith—both are most admirable digests—the first is a truly practical paper, the latter equally so though in a somewhat different acceptation of the term. The article abscess by Dr. Harris is unfinished. So far, however, as it goes, the same general praise may be bestowed upon it as upon the articles which precede it. It presents an accurate view of the present state of our pathological and therapeutical knowledge in regard to the subject. We notice another useful feature in the present work, a definition, namely, of all those words now in general use, those formerly employed, and still frequently met with in medical writings, and especially of such as have been introduced by those writers who have recently advanced new and important views in relation to medical and physiological doctrines, and which are now exerting a powerful influence upon the science of medicine in Europe as well as in this country. D. F. C.

XXV. *A Practical Treatise on the Diseases of the Eye.* By WILLIAM MACKENZIE, Lecturer on the Eye in the University of Glasgow, and one of the Surgeons to the Glasgow Eye Infirmary. From the last London edition. Boston, Carter, Hendee & Co. 1833. pp. 719. 8vo.

This is unquestionably the most elaborate and best treatise on the class of diseases of which it treats, that has appeared in our language. It displays, on the part of the author, extensive research and considerable experience. The publishers are entitled to the thanks of the profession in this country, not only for its republication, but for the *manner* in which it is got up.

QUARTERLY PERISCOPE.

FOREIGN INTELLIGENCE.

PHYSIOLOGY.

1. *Preternatural Lactation.*—The following interesting case of preternatural lactation has been communicated to the Medico-Chirurgical Review, (July, 1832,) by Dr. KENNEDY.—"Judith Waterford lives in the village of Thringston, on the Forest, between Ashby-de-la-Zouch and Loughborough, Leicestershire. At this time, (December, 1831,) she is in her eighty-first year, and though infirm, her constitution has singularly retarded the advances of old age.

"Through life, this woman has been the active and laborious inmate of a peasant's cottage; her person is short and well-proportioned; at one time she weighed about fourteen stone; her temperament is the neuro-sanguineous, distinctly marked. The peculiar circumstances of her history being extensively known in the district where she resides, she has been visited by many clerical, medical, and other curious inquirers.

"J. W. had two husbands. Previously to her first marriage, her menstrual secretion appeared at regular periods; it continued nine days usually, and was very profuse, but preceded and accompanied with little pain or disturbance of the system. After this went, it returned only nine times, at distant and irregular intervals; and on each of these occasions it was abundant, without causing any perceptible diminution of her milk.

"J. W. was first married in 1777; her first child was born in May, 1778; and from that period till May, 1825, her lacteous secretion never in the least subsided. Besides giving her breast freely and frequently to the young ones of her neighbours, she suckled six children of her own by her first husband, and eight nurselings; she had two miscarriages. Her first confinement was followed by an excessive uterine discharge, which continued three weeks and induced considerable debility. No infant, however vigorous, was ever nearly able to use her supply of milk; and, in consequence, she often had her "breasts drawn" to the amount of two quarts in a day; her belief is, that, in general, she could have suckled four lively children at the same time. Many attempts were made, even under medical direction, to suspend the secretion of her milk; but they all utterly failed. Her breasts often became tense and painful; and, for the removal of this state, she had them well rubbed with butter made from the cream of her own milk; this process was invariably advantageous. Sometimes about a pint of this cream was collected, and the butter it yielded was white, and soft as lard, with a sweet taste. Judy took much food, and seldom had recourse to medicine; it is her boast, indeed, that "she never paid a shilling in her life for doctoring, for the sake of her health;" her bowels generally were torpid, often constipated.

"J. W. was a widow nearly three years, and gave suck to her own and other

children during the whole of that period. She had one still-born child to her second husband. Her breasts even now retain a size quite extraordinary, and the axillary glands are occasionally large. Soon after the disappearance of her milk, in 1825, her health became more variable, her energies gradually failed, and her voice, which still is strong, lost its natural strength. Her actual powers of mind seem to have experienced little change; she continues "heart-whole;" her appetite is considerably impaired; she wishes to eat often, but takes little food at one time; her sleep is disturbed and unrefreshing, and a cough gives her occasional annoyance; her pulse is full, soft, not quick, and resistant. For many months, she has been slightly troubled with those periodical disturbances by which menstruation is preceded.

"Although Judy's milk ceased, for a time, in 1825, it repeatedly appeared in minute quantities during the five subsequent years; but, since the Autumn of 1830, the secretion of this fluid has been constant, and, if encouraged, (she thinks,) would be sufficient to nourish a child; from attempting this, however, she is deterred by the idea, that "it would soon be the end of her."

"December 6th, 1831.—This day, being in the middle of her 81st year, Judy readily filled a small spoon with her milk, by squeezing her left breast frequently with the hand. The milk was rich and sweet, and not different from that yielded by young and healthy mothers.

"Here, then, are the remarkable circumstances of a woman who menstruated during lactation—who suckled children uninterruptedly through the full course of forty-seven years—and who, in her eighty-first year, has a moderate but regular secretion of milk."

2. *Doubling of Images by a single Eye.*—PREVOST gives an account of his examination of his own case, in which the right eye especially affected with the defect, and some details of the case of Mr. Babbage, who is similarly affected. In a note, one of the editors of the *Annales de Chim.* (M. Arago, we presume,) states that he labours under a similar defect, but with certain modifications, which he promises to detail. The scope of the above observations seems to connect them with the doubly refracting structure observed in the lenses of animals by Sir David Brewster.*—*Ann. de Chim. Oct.* 1832.

PATHOLOGY.

3. *Aromatic Smell Exhaled from the Surface of the Skin of the Forearm.* Observed by Dr. SPERANZA.—M. T. R., of sanguine and bilious temperament, robust constitution, ætat. 30, after having worked very hard an entire day, perceived, while he undressed, that there exhaled from the internal surface of his left forearm, near the hand, a sweet odour, of very decided character, somewhat like Peruvian balsam, or the vapour of amber, or benzoin when burned on heated coals. Astonished by this singular circumstance, which he was totally unable to explain, having touched no aromatic substance, he came at once to communicate it to his medical attendant. Dr. Speranza found the odour so powerful that he could not avoid suspecting a trick, and several other persons coïncided in this opinion. The most scrupulous investigation, however, showed at once that there was no deception practised.

Various attempts were made by means of frictions and lotions to dissipate or neutralize the odour, but in vain: the smell only increased the more the arm was rubbed and excited. It was particularly strong in the morning just after the man got up, but it continued without intermission the entire day. It was perceptible at a considerable distance from the arm, and even impregnated sensibly the chamber where he slept. Frictions on other parts of the body did not

* Brewster's Optics, p. 205. Am. Ed.

occasion any similar exhalation. When rubbed in the dark with appropriate substances, the arm manifested no signs of electricity. This strange affection continued for two months, when the patient underwent a violent attack of fever; on the first symptoms of which the odour entirely disappeared, and did not return either during the illness, or on the patient's recovery.

Professor Speranza adds a number of analogous observations, already published by various authors, but no plausible explanation of the extraordinary circumstance can be obtained, either from the cases themselves, or the commentaries of their narrators.—*Lancet, from Annali Universali di Med. Sept.* 1832.

—

4. *Accumulation of Fæces in the Colon.*—We transfer to our pages, from our esteemed cotemporary, the *London Medical and Surgical Journal*, the following interesting remarks on this subject, taken from a clinical lecture by Professor Graves.—A young woman was admitted into Meath hospital, Dublin, labouring under symptoms of abdominal irritation, with great distention of the right hypochondrium, in which we could feel a large tumour, capable of being traced up under the ribs, and assuming the appearance of an enlarged liver. Its outline, however, was irregular, and its surface uneven, though it went up under the ribs, and seemed to be continuous with the liver. The woman, too, was young, and there was nothing about her which could induce us to suspect the existence of an hepatic affection. I was inclined to think it a case of fæcal accumulation in the colon, and it proved to be such. These accumulations frequently simulate organic disease of the abdominal viscera: Mr. Crampton and I attended a lady who had a tumour commencing in the right iliac region, and gradually increasing until it occupied nearly the whole abdomen. We examined it, and considered it to be disease of the ovarium. During the course of Mr. Crampton's attendance, she experienced great irritation about the anus, and Mr. Crampton was induced to examine the state of the rectum. He introduced his finger, and found it impeded by something hard, which proved to be indurated fæces. We employed injections, and removed a bucket-full of fæces in the course of two days. An accumulation in the colon had taken place, and we took it to be disease of the ovarium. Now, this lady had been in the habit of taking an aperient three times a week, and stated that she had a discharge from her bowels almost every day for the last three years. Still the fæcal matter had been accumulating; and, you perceive, that it may go on in this way for a very long time with a kind of passage through the indurated portion, by which a small and fluid portion escapes, while every day an addition is made to the original mass lodged in the distended sacculi of the gut, until it attains a magnitude which excites attention and suspicion of organic disease.

Five years ago, Dr. Marsh and I were called to see an old lady in Bagnal's Town, near Carlow, who had long been tormented by a severe and intractable dysentery, complicated with a perceptible tumour in the abdomen. All our efforts to afford her relief were useless, and her case was looked upon as quite hopeless, when she passed a large lump of a substance hard as stone, and which consisted of calcined magnesia cemented together by animal matter. She had for years been in the habit of using magnesia as an aperient. After this mass was voided, all the dysenteric symptoms ceased, and the old lady has since enjoyed excellent health.

—

5. *Roseolous Eruption, caused by the Use of Copaiba and Cubebs.*—A young man, who had formerly had syphilis, for which he had never been regularly treated, was received into la Pitié, under M. Velpeau, for the treatment of an abscess of the abdomen, and a recent gonorrhœa. He was ordered a mixture of copaiba, cubebs, and magnesia; and after having taken it for six days, he began to experience a troublesome itching and burning over the whole head and front of the neck. The next morning there was a full eruption of roseolous patches over his body. These patches were scarcely at all elevated, of various sizes, irregular, some confluent, others distinct, and of a bright red colour; they

very much resembled the rash of measles. By discontinuing the medicine, and keeping the body cool, the eruption began to disappear on the third or fourth day. Three weeks subsequently, the patient having taken another dose of the same medicine, the eruption reäppeared.—*Archives Générales, Nov.* 1831.

6. *New Theory of the Sounds of the Heart.*—Dr. ROUANET, in an ingenious thesis, explains the phenomena of the two sounds in the following manner. The first, or dull sound, is produced by the shock, or impulse of the tricuspid and mitral valves against the auriculo-ventricular orifices, and this shock is caused by the pressure of the blood on the valves during the contraction of the ventricles. The second or clear sound arises from the succussion of the blood in the distended aorta and pulmonary artery, backwards upon the semilunar valves, during the dilatation of the ventricles; the author considering that at this moment, there is a tendency to a vacuum in the ventricle, and that therefore there must be a strong impetus, or rushing back of the blood upon the closed semilunar valves.

The first sound is heard at the commencement of the ventricular contraction; hence the idea that the sound was owing to the contraction of these cavities; and as the sound is momentary, it has been believed that the systole of the ventricles is also of the same brief duration. The cause of its being duller than the second sound is, that the tricuspid and mitral valves are larger, and that the parietes of the auriculo-ventricular apertures are thicker than the semilunar valves and the coats of the aorta and pulmonary artery.

The pulse is not quite synchronous with the first sound, but follows immediately after it. To explain the cause of this, we must remember that the tricuspid and mitral valves close at the very commencement of the ventricular systole, whereas the blood is not entirely expelled till the contraction is over. Such, however, is the rapidity of the contraction, that the second sound is heard almost immediately after the first. The second sound is more clear and sharp than the other, because the valves, by the shock of which it is produced, are smaller and thinner, and because the parietes which transmit the sound are more sonorous than in the former case.—*Med. Chirurg. Rev. from Journ. Hebdom. No.* 97.

7. *Spontaneous Ruptures of the Heart.*—When an ordinary muscle becomes ruptured, the rupture takes place almost always in a transverse direction; in the heart, on the contrary, a longitudinal rupture of the fibres is much more common than a transverse one. In forty-four cases, out of fifty-four of fatal rupture of the heart, the perforation was found in the left ventricle; in eight, the right ventricle was the seat of it; and in the other two, it had taken place between the two auricles. The thickest parts of the ventricles were ruptured in forty-five of the cases; and the interventricular grooves in seven cases only. The ruptured cavities were dilated and attenuated in seven cases; and appeared to be normal in structure in the remainder, except in three of them, where the parietes seemed to be partially or locally rendered thinner in substance. If to the thirteen cases of general ramollissement of the affected organ, be added twenty-seven cases in which morbid alterations of structure, varying, indeed, as to degree, but all tending to a solution of continuity, were observed, and nine cases in which the special alteration is not mentioned, we shall find that the opinion of M. Rostan, that almost all cases of rupture of the heart are spontaneous, is far from being correct. Equally remote from truth is the assertion of M. Bland, that the almost exclusive cause of this fatal accident, is a gelatiniform softening of the heart's substance: there are many other morbid changes besides this ramollissement. To recur to the comparative frequency of transverse and longitudinal rupture of this organ, it appears that thirteen were of the former description and thirty-six of the latter, or in a direction parallel to the muscular fibres.

The difference of the direction is probably attributable to the nature of the

preceding morbid change of the texture, and to the manner in which it is generated; hitherto it has been a very common mistake to regard transverse rupture of the heart as quite analogous in its etiology to a transverse rupture of other muscles, such as the gastrocnemii; but this is erroneous, for, in the one case, a morbid change always, and, in the other, seldom or never, precedes the accident. In ruptures of the heart, as in aneurisms of the vessels, the parts have almost always been found diseased in the first instance; and the diseased depositions are either of an atheromatous, steatomatous, tubercular or cancerous nature. In some cases the rupture is incomplete, affecting only a certain set, or stratum, of the muscular fibres, and not penetrating through the entire thickness of the parietes. It is not improbable that, in many such cases of internal incomplete rupture, the membrane which lines the cavities of the heart may be burst at first, but afterwards may be renewed and impaired, so that the case may be regarded, on the autopsy, as one of simple general dilatation of the cavity, and not as originally a rupture of its parietes. If this idea prove correct, it will follow, that the number of internal ruptures of the heart is nearly equal to that of the external ones.

M. Cruveilhier says that a muscular apoplexy of the substance of the heart is one of the principal causes of rupture; but M. Pigeaux thinks that the morbid change, so designated, ought to be viewed rather as subsequent to, and an effect of, than the cause of lacerated fibres; the rupture, indeed, may not have been complete before the sanguineous effusion and infiltration, but probably takes place only in some of the muscular fasciculi. Another argument against the belief, that ruptures of the heart are analogous to ruptures of other muscles, and are caused by the force of the ventricular contractions, is, that these accidents are very rarely seen to occur in the auricles, and yet the force of their contractions is fully as great, in proportion to their thickness and strength, as those of the ventricles.

It is very probable that, when rupture of the heart does happen, it takes place rather at the moment of its dilatation than of its contraction; the shock and impulse of the blood, as it rushes in upon the softened and diseased part, operating as the immediate agent. This explanation accounts for the extreme rarity of rupture of the auricles, because, in them, ramollissement seldom occurs, and the rushing in of the blood is comparatively feeble; and we now no longer are surprised at the rupture of the ventricle being so frequently in a direction parallel with its muscular fasciculi.

Hitherto it has been too much the case to attribute dilatation of the cavities of the heart to some obstacle, or impediment, to the free flow of the blood from them: such was the opinion of Corvisart; but of late years, M. Pigeaux has called its correctness in question; and, after a most studious examination of the subject, has arrived at the following conclusions:—1. Dilatation of one or more of the cavities frequently occurs, without any contraction of their orifices. 2. Contraction of the orifices often is found, without any dilatation of the cavities. 3. The condition of the lungs has very little influence on the state of the right ventricle, (this is proved by the fact stated by M. Louis, that out of one hundred and five cases of phthisis, dilatation of the right side of the heart existed only in three,) and, therefore, à fortiori, the state of the left ventricle is still less influenced by that of the right one. 4. The impulsion of the blood is the efficient cause of dilatation. 5. The mechanism of the formation of cardiac aneurisms is quite similar to that of the formation of arterial aneurisms. 6. The force of the ascent in the veins, and ingress of the blood into the auricles, (a force which exerts a pressure equal to that of several atmospheres,) compensates for the absence of, and is nearly equivalent in force to, the strong impulsion of the blood into the ventricles. 7. The weight of the blood which remains behind in any cavity, after its systole, may frequently coöperate, with the impulsion of it to give rise to dilatation. 8. A change in the firmness of the parietes of the heart is by far the most common disposing cause of dilatation. 9. Any mechanical impediment to the free egress and course of the

blood, must favour and aggravate the effects of its impulsion.—*Ibid. from Journ Heb.* 104, *and Révue Med. Sept.* 1832.

—

8. *Curious Malformation and Organic Disease of the Heart.*—A female, aged twenty-five years, was attacked with typhus fever in 1824. On the seventh day of the disease, she suffered much from violent palpitations, which lasted for several days, then ceased for a time, and again returned at intervals; distressing vomitings existed at the same time, and in the progress of the fever, delirium, cough, miliaria, gouty pains and œdema of the feet supervened. After the lapse of five months, during the greater part of which time she had been so afflicted with dyspnœa and palpitations that she could walk only at the slowest pace, a violent hæmoptysis came on. By depletion she recovered, and the dyspnœa and palpitations were abated; but every now and then they returned with great severity. In February, 1827, the catamenia were suppressed, and a general breaking up of her health ensued. She died five months after this period, and three years and a half after the attack of typhus. For some time before death, the palpitations had become most afflicting, and were always accompanied with vomiting; the voice also was lost.

On dissection, the heart was found flabby, and devoid of a right auricle; in its place was a venous canal, an inch long, and an inch and a half wide, which extended from the heart to the junction of the two venæ cavæ; the only trace of the sinus venosus was a small portion of the septum, but there was a more considerable vestige of the auricular appendage; its size was about that of a large pea. Where the venous canal was united to the heart, a circular ridge marked the place of the tricuspid valve; the opening, however, was so large, that the canal, and the upper portion of the right ventricle, formed but one continuous cavity; the lower portion of this ventricle was separated from the upper by transverse fleshy pillars, so that there was an upper and a lower cavity in the right ventricle; the pulmonary artery was considerably enlarged; the left side of the heart was of small dimensions, but of normal structure; the lungs were studded with tubercles.—*Ibid. from Hufeland's Journ. July*, 1831.

—

9. *Case of Hydatid Cyst within the Cranium.* By H. Montault.—A man named Girard, æt. 33, a weaver, having worked a long time in a low and damp situation, and been, consequently, exposed to rheumatic affections, about three years since experienced extreme pain at the posterior and lateral part of the left side of the head. Having lasted fifteen days, the pain then extended to the corresponding side of the neck, causing sleeplessness, and embarrassing the movements of the head, accompanied by trembling and shooting of the muscles of this region. According to the patient's statement, these pains followed closely on an accident, he having struck the back part of his neck on falling down a long flight of stairs. To the pain soon succeeded a difficulty of enunciation, but there was no symptom of paralysis of the left side of the face. The application of leeches, &c. procured some abatement of the pain, which disappeared even at the end of a year, but soon returned, (less severely,) and thus continued until September 1831, when it became much more intense at the upper and back part of the neck, so as completely to preclude any movement of the head. In October of the same year, he was admitted into the Salle Saint Marthe, under the charge of M. Dupuytren, who at that time made the following remarks on his condition:—The movements of flexion, whether lateral or antero-posterior, are partly executed by the entire of the vertebral column. The tongue is diminished in volume, and atrophied at its left side alone; more so at the point and middle than at its base. This circumstance the patient noticed from the commencement of his illness. The right side of the tongue seemed larger and stronger than usual. The left side was reduced almost to the thickness of its mucous envelope. The articulation of sounds, difficult at first, was now clear and distinct—a circumstance apparently more the result of exercise in speaking, than of a diminution of the disease. By suc-

cessive applications of four different substances—sugar, sulphate of quinine, muriate of soda, and acids dissolved in a small quantity of water, any changes which might supervene in the sense of taste were carefully noted. The results of these experiments, previously performed on healthy persons, left no doubt that tastes were perceived by the left side of the tongue.

Proceeding by the mode of exclusion, it was easy to conclude, that of the three nerves distributed to the tongue, the hypoglossal, glosso-pharyngeal, and lingual, that of the ninth pair, the hypoglossal should necessarily be altered. The absence of general paralysis, contractions, convulsions, or deranged intelligence, moreover, led M. Dupuytren to admit a lesion of this nerve at its exit from the skull, and not at its origin. As to the nature and species of this lesion, M. Dupuytren suspected that a chronic and rheumatic engorgement of the ligaments uniting the first vertebra and the occiput, might have compressed, or altered, the tissue of the hypoglossal nerve, which escapes by the anterior condyloid foramen. He thought, also, that below the point of its exit the nerve was only atrophied, whence the corresponding paralysis and atrophy of the left side of the tongue.

In a month after this the man left the hospital, but returned again in a few days; again, however, he went home, and a third time returned to the Hôtel-Dieu, (in December 1831,) when he was received into M. Gendrin's wards* in a state much worse than before. On February 14th, 1832, he was somewhat better; no pain in the face, but much in the neck, especially behind the ears, on a level with the posterior and lower part of the mastoid apophyses, and occasionally seeming to follow the nervous filaments of this part. The patient now stated that all his senses were perfect, but that the venereal appetite had sensibly declined for the past three months. On the 10th of February, the experiments of M. Dupuytren on the tongue were repeated, and with the same results. The patient now complained that he occasionally experienced peculiar sensations of trembling, of sharp blows on the skin at both sides, on the shoulders, abdomen, and cheeks. On the 24th of March he again left the Hôtel-Dieu, and returned to M. Rostan's wards on the 28th of the following September. Attentive examination was now made as to his condition, which we proceed to describe:—

Pain towards the occipital opening, extending to the third or fourth cervical vertebra, but permanently fixed on a level with the articulation of the atlas and axis, without swelling or alteration in the texture or colour of those parts. Behind the mastoid apophysis of the same side there is a small tumour of the size of a franc, elevated about two lines above the surface, almost circular, hard, slightly painful on moderate compression, not surrounded by a bony prominence—as we observe in cases of fungi of the dura mater, which have perforated the cranium. Very strong compression causes intense pain, which extends to the origin of the rachidian canal. The sonorousness and clearness of the voice are altered, but the pronunciation is not difficult. No cough or expectoration. The intellect intact, but the patient considers his memory gradually to have declined for the last month. Deglutition imperfect; fluids always penetrate the larynx in small quantities, but solids are swallowed without difficulty. Digestion good; slight constipation; urinary secretion normal. Some torpor of the left arm, but none in the corresponding lower extremity. The patient can, nevertheless, move the arm with perfect precision. No fever. M. Rostan now expressed his belief that the disease was a fungous tumour of the dura mater at the base of the brain.

From the 8th October the patient experienced hiccups; disgust for food; vomiting without any other symptom of gastritis; obstinate constipation. The hiccup returned on the least movement, and was in vain treated by the acetate of morphine. Fever also every evening. The disease now progressed rapidly,

* We omit all details of treatment, &c. with which M. Montault has needlessly encumbered this valuable case, as they are destitute of the slightest interest.—Ed. L.

and, affected by sinister ideas, he left the hospital on the 6th November. On the 20th December he was received again under M. Gendrin's charge in the Hôpital Cochin. The following additional symptoms were then noted. Almost complete aphonia; diminished sensibility of the entire of the left side; scanty secretion of urine; general emaciation; skin dry; memory enfeebled. He is fatigued when questioned; appetite impaired; fever; and want of sleep.

25th December. Voice weaker than ever; the lungs of the left side have become the seat of prickings and lancinations. Intense suborbitar pain; great thirst; tongue slightly red; deglutition of liquids more difficult; *involuntary* and *unconscious* discharge of urine and fæces; total loss of memory; pulse very frequent; skin hot. A confluent and aphthous eruption appeared in a few days after this, which was removed by detersive gargles. From the 1st to the 8th January 1833, there were cough and abundant expectoration, and considerable embarrassment of deglutition, but on the 8th January, this symptom suddenly increased to such a pitch, that the patient was threatened with suffocation every moment; the intellect was still intact. On the 12th January, after swallowing a few spoonfuls of bouillie, he fell back on his pillow and died. For several days before his death, some epileptiform paroxysms had been noticed, and deglutition became so difficult, that he spent entire hours in sucking up a spoonful of bouillie.

Examination of the Body twenty-four hours after death.—External Appearance. No cadaveric rigidity; considerable emaciation.

*Head.**—The pulp of the brain rather firmer than usual, and the ventricles dilated by a great quantity of serum. In lifting out the cerebellum, a cyst was perceived, (having whitish, opaque, slightly-resisting sides, about half a line thick,) in volume equal to a goose's egg, presenting manifest fluctuation. Being casually opened, there escaped a quantity of limpid serum, and a multitude of hydatids, perfectly sound, smooth, and transparent, varying in size from that of a grain of millet seed to a chesnut.

This cyst was placed between the left occipital fossa, the corresponding side of the basilary surface, the left hemisphere of the cerebellum, which it lifted up, and the rachidian bulb, which it pushed slightly to the right side. It adhered to none of these parts, which preserved the brightness of their arachnoid covering, even where in contact with the tumour, so that this seemed as if free in the cavity of that membrane. It penetrated to the depth of some lines into the rachidian canal, and on a level with this point, there proceeded from it a sort of appendix, shaped like the finger of a glove, penetrating the anterior condyloid foramen, and containing a hydatid. From the base of the cyst again proceeded another, still more remarkable, appendage, which engaged itself in the anterior portion of the left posterior foramen lacerum, and, turning from before backwards, after traversing this opening, as it passed behind the bundle of muscles known by the name of the "*Bouquet anatomique de Riolan,*" dilated into a bulbous form, as far as the superior extremity of the complexus and sterno-mastoid muscles. This second cyst, or prolongation of the first, had white, opaque, and soft sides. It was the size of a large nut, covered externally by a fibro-cellular fold, by the digastric muscle, the mastoid apophysis, and the superior extremities of the plexus and sterno-mastoid muscles. This, in fact, was the cyst, the presence of which had been ascertained during life, during the patient's treatment by M. Rostan at the Hôtel-Dieu. It contained numerous hydatids, and communicated with the intra-cranial cyst already described. The narrow structure by which they communicated corresponded with the posterior foramen lacerum.

It became of great importance to examine the nerves proceeding from the base of the cranium. The *lingual* nerves were perfectly *sound*. The glosso-pharyngeal and pneumogastric nerves of the left side differed in no respect

* We omit from M. Montault's tedious and unnecessary details, every thing which presented no morbid deviation.—Ed. L.

from those of the right side, from their origin to their passage into the foramen lacerum posterius, but immediately after their issue from this opening, their condition differed individually. The hypoglossal nerve, or the ninth, also was unaffected from its origin to its exit from the foramen lacerum anterius, but from that point it was in a state of atrophy, reduced to the dimensions of a thread, two-thirds at least less in size than the nerve of the right side. This atrophy continued all along to the minutest ramifications among the muscles of the tongue. It appeared to be the result of the compression exercised by the little appendix sent off from the intra-cranial cyst through the anterior condyloid foramen. The glosso-pharyngeal, spinal, and pneumogastric nerves had also been compressed by the same cyst in the foramen lacerum posterius; however, the glosso-pharyngeal was the only one of these nerves which was smaller, (by one-third,) than those of the opposite side.

The bones in contact with, or pressed upon by, the cysts here described, were absorbed to a considerable extent, as is seen in cases of aneurism pressing on bony parts.

Organs of Deglutition.—At the left side, the muscles, whether intrinsic or external to the tongue, were totally thinned, pale, atrophied; their fibres few, yellowish, and soft, having the aspect of a spongy tissue, devoid of the traces of their primitive organization. Pharynx nothing remarkable; œsophagus strongly contracted, but not altered in structure.

Organs of Voice.—Considerable quantities of bouillie in the larynx; considerable paleness of the larynx; *atrophy* of the left *corda vocalis;* trachea bright red, and its mucous lining swollen.

Thoracic viscera, heart, stomach, intestines, and bladder, quite normal. The hepatic veins much distended, and below the middle lobe there was a smooth white tumour, containing hydatids of variable volume. The vertebræ, spinal column, and its membranes, perfectly healthy.

Reflections.—It seems to me, that the best manner of illustrating the interest of this case, is by placing exactly in juxta-position with each other, the *symptoms* presented by the patient, and the *alterations* found after his death. The principal phenomena, then, which the malady of Gerard presented, were the following, in the order of their appearance:—

1. Pain at the posterior and lateral part of the left side of the head and neck. May we not refer this pain to the development of the external hydatid pouch, which must have compressed, from within outwards, the extremities of the complexus and sterno-mastoid muscles, and to the compression, by the internal cyst, of the spinal nerve in the posterior foramen lacerum?

2. Extreme difficulty of pronunciation, depending on a loss of power of movement in some of the muscles of the tongue. But what nerve was here concerned? The glosso-pharyngeal, which was compressed and diminished in volume. Charles Bell, as is known, has classed this among the respiratory nerves, giving us thereby to understand, that it contributes to movements in relation with the *external phenomena* of *expression* of the individual. M. Manec, in his plates of the origins of the nerves, has confirmed, in this respect, the researches of Charles Bell, by stating that this nerve concurs in the movements of the tongue in the *pronunciation* or *articulation* of sounds, while the movements in *mastication* are influenced by the great hypoglossal.

3. Paralysis and atrophy of the left side of the tongue, without loss of taste. The atrophy of the hypoglossal nerve, and the perfect state of the lingual nerve of the same side, will explain this two-fold circumstance. This fact, then, would prove also, that the trifacial by the lingual branch, presides over the faculty of perceiving or *tasting* flavours. Despite the great number of experiments undertaken to discover to which of the three nerves that distribute themselves to the tongue we are to attribute this property, definitive experiments have until lately been wanting; but at present they abound, so as to place beyond doubt that this property belongs to the lingual branch. The following facts prove this statement. The lingual branch of the fifth pair distributes itself

to the papillæ of the tongue. In the lower animals, in which only one organ of sense, and that the taste, is to be detected, the tongue is supplied by the branch in question. According to Casserius, Scarpa, Jacobson, Dumeril, Treviranus, Weber, Magendie, Serres, and De Blainville, the lingual branch may assist, replace, or act for the gustatory nerve. According to Galen, Willis, Vieussens, Rasseuer, Gall, and Belingeri, taste has also been referred to the same branch; and, lastly, in modern times, several experiments and cures have corroborated this opinion. By means of galvanism, indeed, MM. Dupuytren and Richerand have demonstrated the lingual to be the nerve of taste. The delicate experiments of M. Magendie, who paralyzed the sense of taste by cutting the fifth pair in animals, and the beautiful case related by M. Serres, in which taste was lost during an alteration of the trifacial, (a case by-the-by to which ours forms the counterproof,) concur in the same indications. This atrophy and paralysis of one side of the tongue, with *preservation of taste*, is, moreover, of high importance, since it confirms the law announced by M. Serres, and supported by Geoffroy St.-Hilaire, that every organ of the special senses receives two principal nerves, one which keeps up *the harmony* and *conservation of the constituent parts of the organ*, another which contributes directly to sensation, as *the conductor of the impression to the brain*.

4. Lesion of general sensibility, first in the left side, and then in both sides. I believe this to have depended on the compression by the internal cyst, either of the superior part of the medulla oblongata backwards, or rather of the mesocephalon, which the examination showed to have been much displaced.

5. Paralysis of the organs of deglutition. Explained by the compression and diminished volume of the glosso-pharyngeal nerve.

6. Loss of memory and weakened venereal appetite. These facts are interesting to those who regard the cerebellum as the seat of one or other of the two faculties, a part of it having been compressed by the cyst.

7. Torpidity and commencing paralysis of the left arm; obstinate constipation. This appears to me to be the result of compression on the upper part of the medulla, or medulla oblongata. It is remarkable, too, that all the functional troubles resulting from the compression, whether of the nerves or nervous masses, showed themselves always at the same side as the lesion of the nervous system described in the preceding columns; a fact which accords with our previous physiological knowledge, since the lesion occurred in a part of the nervous system placed below the origin of the nerves. This remark does not apply to the alterations of the general sensibility produced by the compression of the annular protuberance.*

8. Hiccup, aphonia, fall of food into the air-passages; death. All these events appear to me, as well as the atrophy of the thyro-arythenoid muscle, and of the left side of the velum palati, to have been produced by the same lesion, namely, the compression of the pneumogastric nerve in the foramen lacerum posterius,—death being immediately caused by the asphyxia produced by the food which fell into the trachea and bronchial tubes. I think so, because similar accidents follow the section of this nerve at a certain height, or even the section of some of its branches, such as the superior laryngeal and recurrent. It was thus that Galen observed the voice to be lost by the division of the recurrent; that Legallois, Desmoulins, and Dumas, have proved that asphyxia then takes place by occlusion of the glottis; that M. Cruveilhier has ascertained the extinction of the voice to have resulted from compression of the recurrent nerves by an aneurism of the aorta. Additional facts of this kind may be found in the writings of Galen, Picolhomini, Lower, Boyce, Willis, Valsalva, Haller, Dupuytren, Blainville, Brodie, Legallois, Dupuy D'Alfort, Magendie, Wilson Phillip, Dumas, Leuret and Lassaigne, Breschet, Milne Edwards and Vavasseur,

* M. Montault here enters upon some ingenious speculations relative to the cause of the epileptiform accessions. They are, however, too purely theoretical, to be coupled with the preceding facts and deductions. Moreover, M. Gendrin believes the paroxysms to have been rather lethargic than epileptic.—Ed. L.

Abel and Hastings, Laboumes, Broughton, Bichat, Desmoulins, Tiedemann, Gmelin, and Sedillot.—*Lancet, and Journ. Univ. et Hebdom.* 31*st March*, 1833.

10. *Ulcer of the Stomach Cicatrized.*—Dr. Graves relates in the *Dublin Journal, No. V.*, an interesting case of this, occurring in a lady twenty-five years of age, who had suffered much from pain in the stomach, acidity, and indigestion. These symptoms first appeared after a severe shock and fright. She had sometimes intervals of five or six weeks at a time, free from complaint, but these intervals had lately become much shorter. She was pale and emaciated. She was free from pain for some months after Dr. Graves commenced attendance, then pain came on, attended often with a discharge of coloured fluid from the stomach, sometimes resembling coffee-grounds. This state continued for some months, when the pain and tenderness disappeared, though vomiting remained after every kind of food. She was at length worn out. On dissection, an ulcer was found in the neighbourhood of the pylorus, but completely cicatrized. It had penetrated the mucous and muscular coats, but had been arrested by the peritoneal covering, there was no maturation or scirrhus in the neighbourhood. The site of the cicatrix was distended into a kind of pouch, which received a portion of the contents of the stomach, and thus formed a kind of valve which prevented the egress of chyme through the pyloric orifice, nutriment was thus cut off from the system, and death was the result.

MATERIA MEDICA.

11. *Ergot.*—M. Boettcher, at Mendelurtz, in the duchy of Altenbourgh, believing that the different energy of various specimens of ergot might depend on the circumstance of its being collected before or after the cutting of the parent crop, obtained a quantity gathered before, and after the harvest. He sent the separate products to the minister of public instruction at Berlin, who remitted them to Dr. Kluge for clinical trial at the Maternité of that city. The substance was employed on fifteen females, all well formed, and with natural presentations. The following are his comparative results:—1st. The action of the ergot of rye collected before harvest is very energetic, while that collected after harvest is totally powerless. 2d. In many cases the remedy renders the forceps unnecessary, especially when the insufficiency of uterine force depends either on real atony, or on a spasmodic contraction of the neck of the uterus. 3d. The ergot gathered before harvest arrests uterine hæmorrhage. 4th. The dose is from thirty to sixty grains, administered in portions of ten grains every ten minutes.—*London Lancet, from the Allegemeine Medicin. Zeitung. Nov.* 10, 1832.

12. *Radix Caincæ.*—Recent experiments instituted by Dr. Wolff, at Vienna, do not warrant the praises that have been bestowed upon this remedy by François and others. Dr. Wolff has found in his practice its effects to be very analogous to those of the helleborus niger, exciting nausea, vomiting, purging, and that it is by no means a certain diuretic.

13. *On Ergot.*—An admirable essay on the use of ergot of rye in menorrhagia and metrorrhagia, has just been published in the *Bulletin Général de Therapeutique*, by MM. Trousseau and Maisonneuve. We subjoin the conclusions they deduce from their observations, together with a tabular epitome of the cases from which they reason. These researches deserve the deep attention of all practical men.

"*Conclusions.*—From the preceding facts we deem ourselves entitled to conclude—

"1. That the ergot of rye exercises on the uterus a powerful, but transitory action.

"2. That this action chiefly concerns the fibres of the organ, and determines their contraction.

"3. That these contractions, constantly accompanied by pains, put a rapid stop to menorrhagic discharges, on whatever cause they depend.

"4. That the state of the uterus in no respect influences the production of the pains.

"5. That the pains are observed even when a part of the neck of the uterus is affected with cancer.

"6. That the ergot of rye acts on the centre of the nervous system as a narcotic.

"7. That the resulting phenomena are slow but durable.

"8. That they are never serious or dangerous when we confine ourselves to combat the menorrhagia.

"9. That the dose may, without danger or inconvenience, be carried to several drachms in the course of four or five days.

"10. That in the treatment of menorrhagia, divided doses, given at equal intervals, are to be preferred.

"*Lastly.* That we need be under no apprehension of commencing with a drachm dose, divided during the first twenty-four hours.

Tabular Epitome of the Principal Circumstances of the Facts contained in the Body of the Memoir.

Cases.	Age.	Number of Children, or Miscarriages.	Duration of the Disease.	Cure in	Quantity of Ergot taken.
1. Menorrhagia -	18	—	13 days	60 hours	216 grains
2. Ditto. - - -	23	—	6 weeks	7 ditto	108
3. Ditto. - - -	30	—	15 days	44 ditto	168
4. Ditto. - - -	39	—	1 month	¼ hour	108*
5. Ditto. - - -	41	—	ditto	6 hours	204
6. Ditto. - - -	28	1	9 days	18 ditto	192
7. Ditto. - - -	23	2	1 month	3 days	240
8. Ditto. - - -	32	3	9 days	4 ditto	132
9. Metrorrhagia -	36	2	8 days	24 hours	180
10. Ditto. - - -	30	5	6 hours	½ hour	51
11. Ditto. - - -	30	Several	7 days	10 days	192
12. Ditto. - - -	35	10	4 days	5 days	288
13. Carcinoma uteri	49	—	36 hours	36 hours	120

Lancet, March 30, 1833.

—

14. *Effects of large doses of Quinine.*—M. Scott, a medical gentleman, and the subject of the following case, has been from early life the victim of dyspepsia; but although his stomach was a perpetual source of uneasiness, his bowels had never in any way troubled him, until, in the year 1829, he was suddenly seized with general and violent pains in the abdomen, of so excruciating a character as to defy description. After the use of opiate enemata, the paroxysms subsided; but recurred regularly for several successive nights, and at length even opium failed to afford relief. Turpentine clysters were next resorted to, which acted like a charm; the pains subsided, and no relapse occurred for an entire year: at the end of this period they returned, with, if possible, increased violence, and recurred several times a day; and, the intermissions getting shorter, they at length were almost constant. Now even the turpentine enemata failed to assuage the agony, and a variety of treatment was followed, under the advice of Dr. Johnson, with ultimate benefit.

* "In this case the discharge ceased in a quarter of an hour after the administration of the first dose 48 grains; the administration of the ergot was, however, continued until the third day."

The attacks, however, though lessened in duration and in frequency, were not subdued, and Mr. S. subsequently consulted another physician, who recommended quinine, looking on the disease as intermittent neuralgia, but telling him, at the same time, that he must not expect relief excepting from *very large* doses. He was desired to commence with two grains three times a day, and to increase each dose a grain every other day, until they arrived at twenty grains; *i. e.* a drachm a day. Liberal diet was at the same time allowed.

Until the doses were increased to fourteen or sixteen grains, he did not experience any peculiar effects; but then he began to feel heat of skin, dryness of mouth and fauces, and obstinate costiveness. He likewise, at the same time, lost the power of naming substantives; was obliged for a long while to consider what different familiar things were called; and as to casting up a line of six or eight figures correctly, it was utterly impossible; he could never make the amount twice alike. His perceptions of quantity were greatly impaired, so that, in prescriptions, he wrote ounces instead of drachms, ordered drachms instead of grains, directed draughts to be put in gallipots, and prescribed fluids to be made into pills.

Notwithstanding these symptoms, he still persevered with the sulphate of quinine, until he took a scruple four times a day. He was, however, unable to continue these excessive doses long; for the untoward symptoms above detailed increased, so that he was often unable to stand, and several times fell suddenly when in the streets. He, therefore, discontinued the quinine; but, after a short interval, he recommenced its use, at the suggestion of the same physician who at first prescribed it. Now he found that he could not exceed eight-grain doses; for, when he arrived at that quantity, the same effects ensued as from the former scruple doses, and he consequently left it off altogether.

Mr. S. is unable to take any, even the mildest purgative, without provoking the return of one of these excruciating paroxysms, and he regulates the alvine excretions by warm water enemata.—*Lond. Med. and Phys. Journal, March*, 1833.

PRACTICE OF MEDICINE.

15. *Hysteria.*—Professor Chiappa states in the *Annali Universali*, that enemata of iced-water immediately dissipate the symptoms which characterize the hysteric paroxysm.

---

16. *Anthelmintic Emulsion.*—"Turpentine is now regarded as the most certain of our medicines for the expulsion of intestinal worms: it has been exhibited under a great diversity of forms, with a view chiefly to the modification of its nauseousness, or the increase of its specific powers: as combined in the subjoined prescription, it acts with remarkable efficiency:—℞. Infusi Sennæ, f. ℥x.; Syrupi Rhamni, f. ℥j.; Confectionis Scammoniæ, ℈ij.; Copaibæ, ♏xxx.; Olei Terebinthinæ Rectificati, f. ℥vi.—Rité misceantur ut fiat emulsio, quæ horâ matutinâ sumatur.

"This is the dose for an *adult*, having no contra-indicative symptoms: the patient should take it in bed, about four or five o'clock in the morning, and afterwards endeavour to sleep. Generally, within four hours, the medicine begins to determine cathartic effects: if these do not then commence, a small teaspoonful of the confection of scammony, or half an ounce of castor oil, will induce alvine evacuations; after each of these, some drops of an essential oil, or of the aromatic spirit of ammonia, or a little brandy in water, will counteract the tendency to squeamishness and exhaustion which the terebinthinate medicines usually produce. In cases where invermination is indicated by general symptoms, though worms have not been discovered in the patient's dejections, this medicine often accomplishes the dislodgment of these reptiles and a removal of the disorder which their presence had occasioned: in all other cases,

the results of its administration are invariable and salutary. For the destruction of tæniæ, the emulsion should be exhibited at least four times, at moderate intervals; its repetition, within a fortnight, seldom fails of eradicating the other kinds of parasitic animals by which the alvine canal is infected. The use of this vermifuge, should be accompanied and followed by a course of medication with bitters, iron, and mild resinous aperients with aromatics."—*Med. Chirurg. Rev. July*, 1832.

—

17. *On Infantile Convulsions.* By Professor Graves, of Dublin. Extract from a Clinical Lecture.—When we consider the convulsive affections of the infantile period, we find that they may arise from a variety of causes. In the first place, they may be produced by the process of dentition. Some persons seem to think this impossible: but it is not only possible, but true; for teething is capable of exciting a very great degree of irritation in the system. We also observe that an irritable state of the brain, accompanied by a hydrocephalic tendency, will produce convulsions; but in very many instances, particularly in children of the ages mentioned above, they proceed from intestinal irritation. Of those forms which spring from the irritation of dentition, or of cerebral excitement, I do not intend to speak, as, on these matters, the standard medical works furnish abundant information. I shall restrict myself, therefore, to some observations on those convulsions which depend on intestinal irritation. As such convulsions frequently arise from causes which affect digestion, and produce a change in the mode of nutrition, they appear very soon after birth. The animal, which but a short time before was nourished by the placenta, is now supported by ingesta; and hence, from this sudden change, if there be any source of irritation existing in the system of the child, or in the nature of its food, an unhealthy state of bowels rapidly ensues. To the consequences of this affection, manifesting itself so soon after birth, nurses have given the name of *nine-day convulsions*. Again, when another change is made, and the nurse's milk is left off, children are also liable to convulsive fits, and these are the convulsions of ablactation. In fact, at any period during the first year, infants are very apt to get convulsions, from various causes. If the mother uses an improper kind of food or drink, or gets into a bad state of health, or be strongly affected by mental emotion, the quality of the milk will be suddenly changed.* Under all these circumstances, or if the child be over-fed, (a very common fault,) the bowels get out of order, the whole intestinal canal is thrown into a state of irritation, and convulsive fits succeed.

It is necessary to be more explicit on this subject. When you are called to treat a case of infantile convulsions, bear in mind that they very frequently arise, particularly during the first six months, from the cause before mentioned, and this should, therefore, claim at once your attentive consideration. I remember the time when it was the common practice to treat every case of convulsions as if it were an hydrocephalic attack, and when antiphlogistics, calomel, and cutaneous irritation, were the indiscriminate means employed in combating every form of this disease. If a child happened to get a convulsive fit, it was immediately said, here is inflammation or congestion of the brain; and leeches were applied in successive relays, calomel given in large doses, eggshells, crabs' eyes, magnesia, and other absorbents administered, and the unfortunate infants cruelly tortured by the repeated application of blisters to the scalp. I have seen cases where this blistering was carried to such an extent, that the child had not a place to rest its head upon. It is to Dr. Gooch we owe the valuable discovery, that there is in children a state of heaviness of head and torpor, accompanied by a tendency to convulsions, in which depletion cannot be employed, and where narcotics and even stimulants may be used with advantage. Dr. Locock asserts, that convulsions of this nature may be recognised

* It has been lately proved, that the custom adopted by some, of keeping the child at the breast for a year or a year and a half, is both unnatural and injurious. Every child should be weaned when nine months old.

by the depressed state of the fontanelle, an assertion which I have not yet verified. With respect to leeching, I have to remark, that a single leech to an infant is equal to a bleeding in an adult; and yet how often have we seen children leeched and leeched, until, becoming pale and exsanguineous, they sink as much from loss of blood as from the effects of disease.

With respect to the causes and periods of indigestion in children, I have already spoken. There is one point more which I wish you to hold in memory. Milk is a compound fluid, a beautiful emulsion furnished by the hands of nature, in which sugar, oil, and curd, are blended with a certain proportion of water. Now, when a compound fluid, such as milk, enters the stomach, and is submitted to the process of digestion, those parts which are soluble in water are absorbed, and those which are not, become first coagulated, and afterwards undergo resolution in the gastric juice. Thus, while the water and sugar are absorbed, the curd of the milk is separated from it by coagulation, and forms a solid substance, which is acted on by the stomach, and becomes dissolved by the agency of the gastric juice, and in this way contributes to nutrition. Not a particle of the milk, however, ought to enter the duodenum until it has passed through the usual process of digestion. As the first step to the accomplishment of this is the coagulation of the curd, this occurrence takes place with extraordinary rapidity: and it is a sign of health if the milk be thrown up in this state immediately after it has been sucked. The rennets of young animals give striking evidence of this power. But if it should happen that the stomach does not act properly, and the curd remains undissolved, what is the consequence? The curd passes into the alimentary canal in a condition different from that in which nature intended it should, and consequently produces intestinal irritation. None of the purgatives given to children are attended by half so much griping as this substance. This explains the phenomena which, in such cases, present themselves to our observation. The child becomes griped, irritable, and feverish, his tongue is loaded and white, he gets restless, and now and then utters a shrill scream. In this way the disease may go on for a considerable time; as the child is dropping asleep, he starts suddenly and screams out, bends himself in the form of an arch, and throws his head back as in opisthotonos. I have seen children in this state for a week. The physician, or nurse, gives castor oil, or some other purgative, and a great quantity of the curds are passed, and surprise the child's relatives. On examining the discharge, you find it consisting of lumps of different sizes, coloured imperfectly with bile, and having a burnt appearance; on breaking them up, you perceive them to be white internally, and consisting of indigested curd. You remove these by purgative medicine, and the child gets well. Now, we all can do this; it is clearly laid down in books: you are told to examine the egesta, and give purging medicine where it is necessary. But there is one fact which has not been noticed. When you have treated the child in this way, and the attack has been cured, if the child is very strong, when put to the breast again, he may go on well, and you have no further trouble, but if he is weakly, or of an irritable habit, when he is brought back to the suck again, or spoon-fed with milk, the same process of imperfect digestion takes place, and he gets another fit. The physician is again called in, and repeats the purgative, and the child gets better a second time; and, in this way, the physician goes on giving medicine, and the mother giving milk, and every body wonders at seeing what a quantity of foul stuff passes from the bowels. How are you to avoid this? By making the infant abstain from milk in any shape for twenty-four hours, sometimes for the space of two, or even three days. It is incredible how small a portion of milk, even in the most diluted state, will keep up this disease, acting like a species of poison on the intestinal mucous surface. You know, that animal poisons, such as the variolous, or vaccine virus, will affect the system, even when applied in a state of extreme dilution, and you can therefore conceive, that a small portion of milk will operate in this manner. I attended a case of this disease some time ago; the child had a relapse, and, on being called in again, I asked the mother whether she had

given it any milk, and she told me scarcely any. I am always suspicious where I hear the word *scarcely* used; and, on requesting to see the kind of food she had been administering, she handed me a bowl of barley water, with the usual proportion of milk and sugar in it: it is in this way that we see the disease prolonged week after week by the prejudices of the nurse and the ignorance of the physician. Well, if you forbid milk altogether, what will you give the child? Let him take chicken broth, barley water, thin panado, veal broth, or whey. How long are you to continue this? The number of days will depend on the power which the child possesses of regaining the proper tone of the stomach; some children will have the stomach out of order to-day and well to-morrow, and the length of time you are to keep up this diet will vary considerably. When you are called, therefore, to a case of convulsions, inquire into the history of its symptoms, the nature of the alvine evacuations, and the quality and quantity of your patient's food; and if you find that, before the attack, the child's bowels have been in a bad state, that they have been for some weeks inclined to be loose, or that the stools are, at the time, similar in colour and consistence to what I have described, (though, by the by, you are often told, that every thing is quite right when it is not the case,) you will then be able to judge properly of the nature of the case, and, by giving aperient medicines, you will probably not only cure the disease, but also prevent a return of the convulsions. Sometimes, however, the convulsive fits will remain after the irritating sordes have been removed by purgative medicines. Absorbents are next made trial of. These have a very beneficial influence in many cases, they can do no harm, and where acid is present, (and this occurs in the stomachs of children to a greater extent than in those of adults,) prove mildly purgative. But if the convulsions continue, what else will you prescribe? I remember attending, not long since, an infant, about three or four months old, who had been for some time under treatment for convulsions. Leeches had been applied to the epigastrium; it got calomel, castor oil, and hydrargyrum cum creta, absorbents, aperient and fœtid enemata, and blisters to the vertex and stomach. Still the convulsions went on. Well, what did I do? I prescribed the following mixture, ℞. Spirit. terebinth. ʒj.; olei ricini, ʒiv.; syrupi papaveris albi; mucilaginis g. Arabici, aquæ fœniculi, āā. ʒij. Of this mixture, when well shaken, exactly ʒj. was to be given every third hour; and what was the result? It operated on the bowels, and produced a copious discharge of urine, a marked improvement took place, and towards evening the convulsions entirely ceased.

My friend, Dr. Brereton, has, in similar cases, after the bowels were evacuated, succeeded in preventing a recurrence of the convulsions by means of the following mixture, suited to a child six months old:—℞. Olei anisi, gt. iv.; Sacchari albi, gr. x.; intimè misceantur et adde Aquæ fontis, ʒij.; Pulv. rhei, gr. x.; Carbonat. magnesiæ, ℈j.; Tincturæ opii, gt. iv.; Spirit. ammoniæ fœtid. gt. x. Sumat cochleare j. medium tertia q. q. horâ.

It is to be observed, that much caution is necessary in giving such combinations containing opium to infants, but there is a period when depletion ceases to be useful, that a mixture like this will prove the most effectual means of curing convulsions. In such cases of convulsions, in addition to the use of purgative medicine, prescribing the mother's milk, and giving spirit of turpentine, you may, during the first twenty-four hours, while the child is strong, order a warm bath, applying, at the same time, a sponge dipped in cold water to the head; or, if the child be weak, incline its head over the side of the cradle, and use the cold sponge, and you will find that it will diminish the fit.—*Lond. Med. and Surg. Journ. January* 26, 1833.

—

18. *Colliquative Diarrhœa.*—Dr. Graves states, that no other medicine arrests the colliquative diarrhœa which attends consumption, in a more satisfactory manner than a grain of the nitrate of silver given three or four times a day. In those cases in which there is ulceration of the bowels, this remedy is contra-indicated.—*Lond. Med. and Surg. Journ. Feb.* 16, 1833.

19. *On the Employment of the Hydro-ferrocyanate of Quinine in Intermittent Fevers.* By G. Cerioli, M. D.—Though quinine, particularly when exhibited in combination with certain alkalies, is eminently useful in the treatment of intermittent diseases, yet it is very certain, that in a number of instances, the disease returns in a very short time, the remedy apparently having accomplished little more than the mere interruption of its periodical tendency. Without pretending, says M. Cerioli, to be acquainted with all the causes which are productive of such frequent relapses in intermittent diseases, I am inclined to believe, that those persons are not very far from being correct, who, regarding these affections as not altogether dependent upon an irritation or inflammation, the seat of which is fixed, and easily recognised, admit that besides miasmatic emanations, humidity, &c., certain organic alterations, particularly of those organs contained within the cavity of the abdomen, are capable of inducing similar diseases. I believe, moreover, that it is in consequence of the little attention paid to the state of the viscera, that quinine and its preparations so frequently prove inert. It is true they exercise a beneficial effect in putting a stop to the periodicity of the disease, yet they exert no influence over the pathological lesions or inflammatory actions, upon the existence of which periodicity depends. Hence it is that in a great many cases, we are obliged to resort to the combined operations of antiperiodics and antiphlogistics to effect a cure. Our author, like most of the Italian practitioners, regards the hydrocyanic acid as one of the most powerful agents which we possess, for diminishing the augmented actions of the vital powers which accompany inflammation. He has accordingly combined this acid with the quinine, and employs the salt resulting from the combination in periodical diseases. The results which he has obtained in a number of cases, sufficiently prove, that although his theory may not be entirely incontestible, the remedy which he employs, possesses febrifuge properties of the greatest activity. It is true he has employed it only in cases of simple intermittent fevers, without complication, and which were attended by no dangerous symptoms; "for," says he, "I have never dared to administer a substance of which I at present know so little, in cases of malignant intermittent, in which the least delay might endanger the life of the patient." It is principally in those fevers, the paroxysms of which are kept up by visceral irritation, that he administers the hydro-ferrocyanate of quinine. He has employed it in twenty-four cases of this nature, in all of which the sulphate of quinine had completely failed, not only in checking the disease, but even in lengthening the intervals between the paroxysms. In thirteen of these cases, the disease, which assumed the quartan type, seemed to depend upon an irritation of the spleen; in some of these, indeed, this organ was manifestly more voluminous than in its normal condition; whilst in others, there still existed pain upon pressure in the left hypochondriac region, which pain usually became lancinating during a paroxysm. These cases were, generally speaking, of long standing, the disease, in some of them, having existed for several months, in others again for two or three years, and in one, that of a young girl, it had lasted eight years. They had all resisted the most approved methods of treatment, conducted with the greatest prudence; such as sanguine depletions, both local and general, emollients, aperients, and finally the sulphate of quinine itself, which produced little or no effect. It is sufficient in quartan fevers, as well as in those of any other type, to commence in the first instance with the hydro-ferrocyanate, in doses of two, three, four, and even eight grains, made into six pills with a little syrup, the whole number to be taken during the day. The dose should never be augmented beyond two grains, but progressively, and where the fever has not completely yielded, or where the paroxysms have been merely retarded, or when the first dose does not disagree with the stomach. Rarely, continues M. Cerioli, have I been troubled with relapses, and I have never seen, during the exhibition of this substance, those exacerbations which so frequently manifest themselves during the employment of the quinine or its sulphate, arise; though I do not believe, that the exacerbations of fevers, which bear a resemblance to intermittents, should

be attributed to the irritating action of the sulph. quinine. A chronic inflammation of the liver was the cause, in four cases, of the appearance of the irregular or erratic fever, which was attended with considerable weakness, emaciation, anorexia, flatulency, gastralgia, reddish urine depositing a brick-dust sediment, and lastly by obtuse pain, which in two of the individuals extended from the hepatic region to the right shoulder. In one of these cases the chronic hepatitis depended upon a rheumatismal cause; in the other it had been induced by irregular living, which had moreover, brought on an irritation of the stomach of some intensity. Topical blood-letting often repeated, either from the anus or right hypochondriac region, or from the epigastrium. Emollient enemata, mercurials, or rigid diet, and in one of the cases the warm bath was found exceedingly beneficial in diminishing the intensity of the intermittent abdominal irritation; but the fever continued to progress in spite of the employment of the sulph. quinine. In order to prevent the occurrence of a new congestion of the liver or stomach, M. Cerioli administered the hydro-ferrocyanate of quinine, which effected a prompt and permanent cure.

Case.—A young woman, of good constitution, was seized with a tertian fever, which was treated with the sulph. quinine, in fifteen-grain doses. The fever, instead of yielding, became on the contrary continued, at the same time the patient complained of a constant sensation of heat and pain in the epigastrium, which the most digestible articles of food, or the slightest pressure upon that region rendered almost insupportable. To these symptoms were added, violent thirst, bitter taste in the mouth, head-ache, and a fever which underwent a manifest exacerbation upon the days corresponding to the paroxysmal days of the preceding tertian. M. C. commenced by attacking the gastric symptoms, with the numerous anti-phlogistic remedies, by which means in about fifteen days, the whole of the inflammatory symptoms had entirely disappeared. The fever itself ceased during several hours, but soon returned under the tertian type, the aspect under which it had previously existed. The sulph. quinine was again had recourse to, but without any success. The hydro-ferrocyanate was then administered, the paroxysms in a few days disappeared, and a permanent cure was effected. Our author reports several cases of intermittent affections, characterized by different phenomena, in which he employed this salt of quinine with great success. We shall only cite two of these cases, which seem to us the most interesting.

Case I. A priest, somewhat advanced in years, who, in his youth, had been subject to a constant cough, accompanied by mucous expectoration, and occasionally by spitting of blood, was suddenly seized with a partial loss of the intellectual faculties, lividity of the face, swelling of the jugulars, stupor, very hard pulse, slight degree of heat of surface, partial aphonia, distortion of the mouth, and a commencing hemiplegia. Two large bleedings from the arm, the administration of gentle cathartics, and a strong decoction of arnica flowers, caused the whole of these dangerous symptoms to disappear, and the patient considered himself as cured. In about five days, however, the same symptoms reappeared, accompanied by intense fever, which was preceded by a chill. V. S. was again had recourse to, and in about eight hours time, after an abundant perspiration, this alarming state entirely vanished. There was no return of fever the next day, but the day after it again appeared, and with augmented severity. No longer doubting as regarded the nature and type of the disease, M. C. administered the hydro-ferrocyanate of quinine; after the second dose, all the symptoms entirely disappeared, and a permanent cure was effected.

Case II. The next case was that of a young woman of robust constitution and sanguine temperament, who laboured under acute sciatica, of a paroxysmal type, the paroxysms usually terminating by profuse perspiration. Bleeding from the saphena vein, leeches, cups, scarifications, emollient and anodyne fomentations, vesicatories, the belladonna ointment, the cautery, and a host of other remedies were administered, in the hope of effecting a cure. By these measures an amelioration amounting almost to a cure, but which lasted only

four months, was effected. About the end of this period the disease reäppeared, with more violence than ever, and assumed the quotidian form. The sulph. quinine having completely failed in producing any relief, M. C. administered the hydro-ferrocyanate in the dose of eight grains, the pain promptly disappeared, and a complete and permanent restoration to health took place.

Finally, our author assures us, that he has obtained the most happy results from the employment of this remedy, in three cases of pulmonary irritation, characterized by pain in the side, difficult respiration, cough, and impossibility of lying on the right side. Hæmoptysis of some violence was likewise present in one of the cases. General blood-letting, purgatives, and other appropriate remedies soon put a stop to the continued fever, it however reäppeared under the tertian type, the paroxysms of which were marked by a return of all the symptoms above described, with the addition of a copious expectoration of red frothy blood. The sulphate having failed, the hydro-ferrocyanate of quinine was prescribed, and in a short time a permanent cure took place.—*Archives Gén. Dec.* 1832, *and Annali Univ. July*, 1832.

—

20. *On the Employment of the Chloride of Lime in the Treatment of Psora.*—Professor Fantonetti, of the University of Pavia, has lately published a statement of the happy results obtained by himself, both in private and public practice, from the application of the chloride of lime in the treatment of psora. The Professor has treated eight cases of itch, all of which were received into the Hospital of Pavia, about the same period with this remedy. Out of this number, five were cured in from six to eight days from the commencement of the treatment, and the rest in a few days more.

The manner of using it, is to prepare a lotion, composed in adult cases of from one ounce to an ounce and a half of the chloride, to a pint of common water, and in children, of one ounce of the chloride to the same quantity of water, with which the parts affected are to be washed three or four times a day. Every third day the patient should take a warm bath, for the double purpose of cleansing the surface of the body, and washing off the crust of carb. lime, which may adhere to it. The warm bath moreover, tends to sooth the irritation, which this remedy sometimes occasions, as when the quantity of the chloride has been too great in proportion to the water, or its application too frequently repeated, or when the skin itself was originally in a state of irritation.

Professor Fantonetti assures us, that in almost every case of psora treated in this way, a cure is effected in eight days time from the commencement of the treatment, and he recommends it to the profession as the most certain, the most prompt, and at the same time the most economical of all the remedies with which this disease may be treated. These results of M. F. should particularly attract the attention of the profession, since similar ones had previously been obtained in France by the exhibition of this article. M. Derheins, an apothecary, residing at Saint-Omer, published in 1827 a paper on this subject; and to him, therefore, is due any credit that may be attached to the introduction of this remedy into practice; upon the utility of which our professional brethren will have to decide. M. Derheins, as well as M. Fantonetti, assures us, that he has cured some of the most inveterate cases of the disease, with it alone, after they had resisted a host of other remedies. He employed a lotion consisting of three ounces of the chloride to a pint of water, with which the diseased parts were washed three or four times a day. The average period necessary to effect a cure in his hands, varied from six to ten days. He had however remarked, that the cure was more prompt when, instead of the common solution of the chloride in water, he employed a liquid chloride, obtained by passing a stream of chlorine gas through a mixture of lime in water, until the gas was in excess. We should, moreover remark, that the statements given above are supported by the following facts. In 1810, the Spanish prisoners who were crowded together in large numbers at Flessingue, were attacked by fevers of a very fatal character, which soon thinned the ranks of these unfor-

tunate beings, the most of whom at the time laboured under the itch. Water impregnated with chlorine was used in order to diminish the contagious tendency of the fevers, and M. Cluzel, the apothecary, observed that all those individuals affected with psora who washed their hands in the chlorated liquid, were very much benefited by it, and more than one attributed their cure of this disease to the employment of this simple remedy alone. However this may be, it is certainly an interesting fact, that in repeating the experiments of M. Derheins, which were published by M. Chevallier in his treatise on the chlorides, that M. Fantonetti met with similar beneficial results. The observations which have been made upon this article, should induce the profession to set the point relative to its great efficacy at rest, by at once repeating the experiments of MM. Derheins and Fantonetti. If the cure be as prompt as they state it to be, the introduction of the remedy will certainly prove one of the most important improvements in the treatment of this disease; for, according to Melier, the average period required by every other method of treatment employed in psora to effect a cure, is twenty days. The odour of the chloride of lime is by no means so disagreeable as that of sulphur, (the remedy usually resorted to,) nor does it stain every thing with which it comes in contact, as the latter article, which is almost always combined with some fatty substance, does. If, therefore, it proves as successful in effecting a cure as the sulphur has, it certainly should be preferred to this article in practice.—*Bulletin de Thérapeutique.*

—

21. *Chronic Bronchitis.*—Professor Graves has been treating a case of this, in which he suspected dilatation of the bronchial tubes, with an emetic every day, after the plan recommended by Dr. Fothergill, and lately by Dr. Elliotson.—"In cases like this," says Professor G., "there is a great quantity of mucus in the bronchial tubes, the lung becomes loaded and respiration oppressed, and the best thing you can do is to give an emetic, which produces the most beneficial effect on respiration. That the emetic may not interfere with the man's digestion, I give it in the morning, about four or five o'clock, when he awakes. Such persons are generally awakened at an early hour by the cough, which is brought on by the quantity of mucus accumulated during sleep, and continue to cough for three or four hours with great distress. This is the time when an emetic is given with the best effects; it unloads the lungs, shortens the fit of coughing, and gives very speedy relief, at the same time that it does not interfere with the patient's meals, for the stomach will be quite well before breakfast."—*Lond. Med. and Surg. Journ. April*, 1833.

—

22. *On Rachialgia.* By M. Andral.—The painful affections of the vertebral column, when strictly nervous, and independent of inflammatory action, are called *rachialgia*, a name by the way which has been very erroneously given to the painter's colic. The rachialgic pain, then, may extend along the whole of the spine, or be confined to one of its three principal divisions, or embrace parts of two of them, for example, engaging half of the cervical and a third of the dorsal vertebræ. Sometimes too, it is confined to half of the vertebral column precisely, and then it acquires the name of *hemirachialgia.* The symptoms of rachialgia may vary according to the part of the spinal column affected. When the cervical vertebræ alone suffer, it is not rare to meet with pain in the neck at the same time, extending occasionally to the face, occiput, upper part of the back, or arm. It is sometimes complicated too with lesions of movement in the muscles, which derive their nerves from this part of the spinal cord. Paralysis, muscular spasms, or tonic contractions, may thus supervene. Sometimes, by an inexplicable sympathy, violent palpitations of the heart are experienced, and at the same time the sensibility of the skin may be altered, and torpidity occur. In the dorsal or lumbar rachialgia the symptoms maintain a close analogy with those now described, verging, of course, according to the different structures and functions of the parts which the nerves supply, thus in

the lumbar rachialgia the expulsion of the urine may be affected. It may escape involuntarily in some, or be exerted with difficulty in others.

As for the diagnosis of rachialgia, the absence of pain on pressure distinguishes it from other spinal affections. The rachialgic pain is further remarkable for its mobility. An individual is one day tormented with all the symptoms just described, and to-morrow he is well, or at least free from pain. This is a mark which well distinguishes the mere neuralgic pain from organic lesions of the spinal cord. May we regard these symptoms then as the effects of transitory congestion,—of a state approaching to, though not reaching, inflammation? This is a mere hypothesis, which further experience can alone confirm or refute. Its consideration, however, will serve at least the useful purpose of connecting in your memory the transitory and oscillating character of the disease, with a notion that will render its diagnosis more easy, and at the same time do no practical mischief. The treatment consists in the use of different ointments, frictions with various anodyne and narcotic substances, with the ointment, of course, of potash, for example, or with oil containing the tincture of hyosciamus or belladonna. Experience has shown that tepid baths and douches are of much utility. If the pain persists, and the other complications present themselves, we must, according to the symptoms, have recourse to venesection, leeches, irritating and revulsive plasters; to the application of tartar emetic ointment, frictions with croton oil, &c. Blisters, the cautery, and moxa, may also be employed, should the symptoms demand such energetic measures.

—

23. *Case of Gastro-enteritis simulating Epidemic Cholera.*—Professor Broussais has recorded the following interesting case in the No. of his Journal for January, 1832. The patient was suddenly attacked, without any ascertainable cause, with severe colic, painful vomiting, and diarrhœa. When brought into Dr. Broussais' wards, he was in the following condition:—Aspect cadaverous; face shrunk; eyes red; mind bewildered; pulse small and scarcely perceptible; extremities icy cold; tongue dry, red, and cold; sordes about the teeth; epigastric region tender, when compressed. Although the pulse was so faltering, and the skin so cold, Dr. B. ordered fifteen leeches to the epigastrium, and as many to the anus. An opiate starch enema was given to quiet the bowels; lemonade to drink. The diarrhœa was stopped, but the vomiting continued for two or three days; the stupor increased, the eyes became more red, and the face more corpse-like. Ten leeches over the jugular vein of each side, and frictions with warm camphorated vinegar on the abdomen. The head was thus relieved, but in two days afterwards the stupor returned, and twenty leeches were now applied to the temples, blisters to the thighs, and the stimulating frictions to the belly.

Six days having now elapsed, without any marked improvement, Dr. B. ordered two more blisters to the thighs, and the embrocations to be continued; and although the pulse was not to be felt, he forbid all stimulants, and even broth. On the tenth day the patient appeared somewhat revived, and he asked with a weak voice for food. A little very thin broth was given. A blister was ordered between the shoulders; the frictions were assiduously kept up, and the only food permitted was lemonade and gum water. A slight attack of bronchitis came on, and the pulse rose, and heat of surface increased; in three days the symptoms abated, and the pulse again fell; the same treatment was continued. On the fifteenth day after his admission, the symptoms were thus reported;—head is less confused, aspect not so cadaverous, but the coldness of skin and smallness of pulse little improved. Next day, however, the pulse rose, and the patient appeared altogether better. The abdomen was soft, compressible, and not tender; and the tongue was moist, and still rather red. Dr. B. was led to infer that now the spasmodic contractions, induced by the phlegmasia of the small intestines, had ceased, and that therefore the peristaltic movements, hitherto impeded, might permit the digestion of broth; it

was accordingly given with excellent effects, and the patient progressively *advanced to recovery*.

Remarks.—It appears that gastro-enteritic inflammations have the effect of greatly weakening the action of the heart, and of thus enfeebling the cutaneous circulation, while at the same time the blood is congested in the viscera. In such cases we do not approve of the employment of purgatives, or of any stimulants; and allow only emollient drink at intervals, employ frictions on the surface, and large warm poultices to the belly. If one part of the abdomen appears more congested than another, leeches are to be put on that part, and to be repeated according to circumstances. This plan of treatment must be undeviatingly persevered in, till the spasmodic contraction of the bowels ceases, and the peristaltic movements are reëstablished, the indications of which are the relaxation and pliancy of the abdominal muscles, which so faithfully correspond to the condition of the intestinal superficies; then, but not till then, are we to give nourishment. In short, our treatment is comprehended in three things, viz. local bleeding, external warmth and frictions of the surface, and lastly, patience.

OPHTHALMOLOGY.

24. *Hemeralopia, or Night Blindness.*—About the beginning of February last, several of the garrison of Belfort, (France,) complained of being unable to see either after sunset or before sunrise. The number thus affected, however, was inconsiderable, not exceeding twelve or fifteen, but they increased rapidly towards the end of February and during the month of March. Every evening, a little after sunset, a number of soldiers, (for it was confined to the troops composing the garrison,) might be seen wandering about, and scarcely able to find their way. Many were obliged to get persons to guide them, or to feel their way along the walls and houses, to gain their barracks. Ninety of the 36th regiment of infantry, and twenty of the first regiment of dragoons were thus affected. Sixty of these were cured in the course of about ten days by means of tonics and stimulating washes to the eye, blisters to the back of the neck, and full doses (15 or 20 grains) of calomel, though this last was but seldom found necessary. The epidemic entirely ceased towards the end of April.

The blindness in hemeralopia is seldom complete; that is to say, the subjects of it are for the most part able to distinguish objects, and especially any thing brilliant, which is near them, but even these appear as if seen through a dense cloud. In some, indeed, vision is altogether abolished, even luminous bodies making no impression upon the eye: in these the pupil is generally much dilated, and quite motionless, while in the former it has nearly its natural appearance. Most authors, in speaking of hemeralopia, represent it as preceded and accompanied by head-ache, giddiness, indigestion, or coma, or functional disturbance; but in the cases at Belfort, all the patients were, with the exception of the night blindness, in perfect health. Its causes are evidently but ill-understood; and, indeed, it prevails endemically in some places, as at St. Martin-de-la-Roche and Folleunville, which have no local peculiarities by which this can be accounted for.—*Lond. Med. Gaz. June*, 1832.

25. *Method of Applying Nitrate of Silver to Ulcers of the Cornea.*—A very ingenious method of preparing nitrate of silver for application to ulcers of the cornea, is described in the *Bulletin de Therapeutique*. This consists in heating an inch of the extremity of a silver probe, and then lightly rubbing it on a stick of lunar caustic. The salt is immediately melted, and unites with the metallic surface, coating it with a thin layer of caustic; if too thin the process is to be repeated. When the instrument cools it must be wiped clean.

SURGERY.

26. *Chloride of Soda in Burns, Scalds, and Black-Eyes.*—Mr. Holt recommended at a meeting of the Westminster Medical Society, the chloride of soda as the best application he is acquainted with in the cases just enumerated. Mr. H. stated that he was called to a child that had pulled a saucepan of boiling water over its face and chest, on Monday, by which the whole of the cuticle was destroyed. He had four ounces of the solution of chlorine and water made up and applied, and subsequently chlorine mixed with unguentum cetacei spread on the parts. The result was, that by the following Saturday, the injured part was perfectly well, while a small portion on the back, treated by other means, was unhealed for a fortnight. He particularly recommended the use of the chlorine where vesication had not yet taken place; and pledged his veracity, that if applied immediately after a scald had occurred, not the slightest scar would remain. Where the skin was broken, it was his custom to make the lotion of four ounces to a pint of water, and the ointment of a consistence not quite so thin as cream. Amongst other cases he cited was one of a solicitor, whose hands were much blistered in putting out the flames of his bed-curtains, fired by his servant. He (Mr. Holt) sent a couple of quarts of the lotion to this gentleman, had it poured into soup plates, wrapped his hands in lint, as no skin was broken, placed them in the plates, and kept them there some time, and the next morning his hands were so perfectly well, that only one small dried patch of burn existed; and he was not out of his office an hour in consequence of the injury. An hour and a half had elapsed before the application. For the first few minutes the remedy increases the pain, but after that it produces ease. He would also state, that he knew of nothing so efficacious in a "black-eye" as the application of a solution of chlorine. It would disperse the awkward effects of a blow in that direction, almost like a charm.*—*Lancet, April* 6, 1833.

27. *Case of Œdematous Angina successfully treated by Tracheotomy.*—The following interesting case was related by Baron Dupuytren, in one of his clinical lectures at the Hôtel-Dieu. Mad. B. æt. 34, governess, was taken to the Hôtel-Dieu on the 24th of October, 1832, in a state of suffocation, which every moment threatened her life. Five months before, this lady had been attacked with a guttural angina, and very intense bronchitis. She had long felt pain and heat along the anterior part of the neck, her voice had become hoarse, and for some days she had been quite dumb. Repose, a bleeding, leeches, and emollient soothing tisans, calmed the greater part of the distressing symptoms; and scarcely was this improvement effected, when she resumed her habitual occupations, went to sing at church with her pupils, and fatigued herself greatly. Her symptoms accordingly returned, less urgently, but more obstinate than before. She coughed frequently, experienced continual heat and pain of the larynx. The voice was altered, respiration difficult, sometimes hissing, and convulsive during the night. However, there were still alternations of improvement, until at length she was compelled to come to the Hôtel-Dieu in the following condition:—The posterior wall of the pharynx was red, a little painful, somewhat swollen. The larynx, and all the surrounding parts, were the seat of a peculiar uneasiness. The respiration was difficult, inspiration hissing, the voice hoarse and weak. She complained of a very distressing pain behind the lowest piece of the sternum. During sleep, which was but of short duration, the respiration was more difficult, and the laryngo-tracheal hissing more decided. On the 25th, 26th, and 27th, the affection was treated by simple methods, such as the tisan of liquorice, poultices about the neck, and soothing gargles. The disease, however, continued to proceed. The laryngeal embarrassment became more considerable. Madame B. believed she had some

* In some of the northern counties of England, the working men treat a black-eye very beneficially, by sucking with the mouth, for a short period, behind the bruised man's ear.

foreign body in her throat, which hindered her from breathing; the coughing was now in long fits, the laryngeal hissing more intense, the voice very hoarse, weak, and interrupted. During the day, prostration and somnolency; restlessness and inquietude during the night. Her face expressed anxiety. The pulse was frequent and irregular in the paroxysms. At this period, M. Husson thought he detected a swelling of the mucous membrane of the larynx, and agreed with MM. Recamier and Broussais in regarding the case as one of œdematous angina.

The 29th, 30th, and 31st of October, twenty grains of ipecacuanha were given daily, seven grains every third hour. There were several evacuations upwards and downwards, the vomiting being accompanied by the serious symptoms of convulsions, determination of blood to the brain, frequent cough, and imminent suffocation. Palliative means were still employed; among others, leeches to the vulva, her catamenia being but scanty. On the 2d of November the suffocation augmented, and she was bled copiously from the arm. Sinapisms were applied to the thighs, and a purgative injection was prescribed. On the 4th she was in the same state; thirty leeches were applied to the base and sides of the neck, with slight benefit towards evening. The night, nevertheless, was very bad. In the morning respiration extremely irregular and interrupted, and inspiration so difficult, that it produced a sound like the lowing of a cow. The patient was obliged to sit up erect; venesection and sinapisms to the thighs.

On the 5th, same state. I was now consulted, and the nature of the case ascertained to be as MM. Husson, Recamier, and Broussais, had declared. Another venesection was performed, and sinapisms applied to the legs and arms. On the 6th and 7th the repeated paroxysms of dyspnœa announced the approach of death, should no energetic proceeding be forthwith adopted. The operations of hæmatosis were already troubled, and the colour of the skin was leaden. During the access, she was either pale or red; her state of agony was indescribable, her terror and anxiety extreme. Another bleeding produced no improvement, and at three P. M. tracheotomy was deemed indispensable; the operation was accordingly practised in the ordinary manner, with the exception that two small transverse cuts were made in the trachea, so as to give the opening in this tube a crucial form. Immediate relief was experienced. The pulse gradually became more regular, the paleness of the face and the somnolency diminished. She slept several hours during the night. At the morning visit, she answered "she was better." The air, which issued from the wound, had a metallic sound. Next morning, the 9th, it was perceived that the opening had a tendency to contract, and that it was partly obliterated by the desiccation of the mucus and pus on its edges. A gum-elastic cannula, seven lines in diameter, was introduced; from time to time it was moved and cleaned, and as it was found to be displaced by the least coughing, another, of ivory, was substituted for it. This again was subsequently exchanged for another little instrument somewhat like a dissection forceps, and both branches of which, by staying apart, kept the edges of the wound asunder.

On the 16th, slight purgatives, some soup, and a little sulphate of soda, were given. On the 14th, a seton was introduced into the neck. The 16th, by shutting the wound for a moment, it was ascertained that the voice was less hoarse, the respiration easier, the hissing of inspiration less intense. On the 20th the opening was enlarged, and a fibro-cartilage divided. Calomel, in the dose of five grains daily, was given from this time till the discharge of the patient on the 5th of December, when, though not perfectly cured, her condition was very satisfactory, the wound being almost closed, and the laryngeal affection nearly disappeared. On the 20th of January, a letter was received from her, stating that the opening was perfectly healed up, that the cough was extremely rare, and that the hoarseness was wonderfully diminished. On the 31st of March 1833, she came to the Hôtel-Dieu perfectly cured, and in blooming health. It is unnecessary to add further remarks on this most interesting case.

Those only who have seen Madame B. in M. Husson's wards, can appreciate the immense service conferred on a patient whom so many practitioners had abandoned.

—

28. *Aneurisms.*—M. Breschet has communicated to the Royal Academy of Sciences three memoirs on aneurisms. The first treats of true aneurisms, and by the dilatation of the arterial tubes; the second of mixed aneurisms, and the third of varicose aneurisms. Although the ancients have spoken of aneurisms, it has been however only since the discovery of the circulation of the blood that we have had just ideas upon this organic affection; yet physicians do not at the present day completely agree relatively to the existence of true aneurisms, or those caused by simple dilatation of the arterial coats. Scarpa contends that aneurisms depend always upon a steatomatous alteration of the coats, and since the publication of his work, the greater part of pathologists have sided with this opinion. Others are of opinion that the dilatation of the artery happens only in the commencement of the disease, and that the rupture of the coats of the vessel constitutes the last stage of aneurism. Nevertheless M. Breschet has proved the existence of a dilatation of the arteries which lasted during the entire duration of the disease, and he has seen that this dilatation could be referred to four principal types according to the differences in the form of the expansion of the arterial tubes. He divides them thus:—1st, the true sacciform aneurism; 2d, the true fusiform aneurism; 3d, the true cylindrical aneurism; 4th, the true varicose aneurism. This knowledge of true aneurism, and of all its forms, is not, says the author, a fact of mere curiosity; it is directly united with the curative method which ought to be employed.

In the sacciform aneurism the vessel exhibits upon a point of its circumference a swelling, which may be compared to a little sac produced by the expansion of the arterial membranes. This state, considered in the ascending aorta, can only appear to be an increase of certain anatomical dispositions which are known to exist at the orifice of this arterial trunk, or towards its sub-sternal curvature. Depressions, or sinuses, which pathologists have regarded as the first degree of an aneurism, though their constant existence upon adult subjects should cause them to be considered as a natural and regular anatomical disposition, are seen above the sigmoid valves of the curvature of the aorta.

The large arterial trunks, such as the ascending aorta, the arch and the descending aorta, are especially the seat of the sacciform aneurisms. However they are also met with in the carotid arteries, the iliac arteries, and sometimes even in the arteries of the extremities. In this aneurism all the membranes are dilated simultaneously: but as the internal and middle coats, the latter particularly, have a very limited extensibility, it results that very large sacciform aneurisms do not occur; in general the size of these aneurisms is comparable to that of a filbert, or of a walnut. Nevertheless they have been seen to attain on the aorta the size of a hen's egg.

In the true fusiform aneurism the dilatation takes place upon the entire circumference of the vessel; all the membranes participate in it. The name by which it is designated, indicates sufficiently the form which it presents. The calibre of the artery, after having increased progressively during a certain part of the course of the vessel, diminishes afterwards in a manner equally insensible until it arrives at its normal diameter.

The cylindrical aneurism may, strictly speaking, be considered a variety of the fusiform, for a sudden transition from a determinate calibre to one much greater is never seen; it is without doubt for this reason that it has been almost completely neglected by pathologists; however it merits a separate consideration. In fact cases are found in which a vessel is regularly dilated for the distance of one or two feet, the cylindrical form being perfectly preserved for the whole of this length. This is observed upon the arteries of the extremities, of the splanchnic cavities, but particularly of the cranium. The vessel in these aneurisms takes a calibre quintuple, and sometimes decuple that which it ought

to have. The cylindrical aneurism differs from the arterial varix in this, that in the latter affection, at the same time that the artery is more or less dilated, it is irregular, and presents sometimes here and there little sacciform tumours, and the coats of the vessel are thin, soft, flaccid, collapsing, as the coats of the veins, whilst in the other case they are rather thickened than otherwise.

It is quite common when the arteries increase their extent in one of their dimensions, that they also are enlarged in the other. However, the elongation which accompanies the dilatation in the cylindrical aneurism, does not also give to the vessels these irregularities of the arterial varix.

The large arteries present less frequently the cylindrical aneurisms than either the moderate sized, or the small arteries. However G. Hunter has found a woman with the aorta dilated from its origin at the heart, to its passage between the crura of the diaphragm. Besides its enlargement, it had become so long, that it could not descend in a straight line along the spine, as in the natural state, but it made contortions in the whole of its course.

The cylindrical aneurism in the arteries of the smallest calibre, the capillaries for example, is the aneurism by anastomosis. It resembles in certain respects that kind of alteration which constitutes the erectile tumours, which are the product of an aneurism by venous anastomoses. It is distinguished from that by the tumour which it forms, presenting pulsations isochronous with those of the pulse, whilst the other only offers a transient turgescence, owing to an accumulation of venous blood in certain states of the circulation.

The change of colour, so remarkable in erectile tumours, is not seen in those which arise from arterial anastomosis, and it is likewise a sign by which one may be distinguished from the other.

The arterial varix is a disease of the arteries entirely comparable to that of the veins, of which it has borrowed the name. A dilatation of the vessel is observed in a part more or less of its extent, often in the entire length of the vascular trunk, and of its principal branches; besides this transvere dilatation, there is an elongation of the same vessel, which becomes tortuous, and describes circuits more or less numerous and considerable. Sometimes, independently of these sudden dilatations of the whole arterial tube, may be seen upon some points nodes, or little circumscribed aneurismal tumours, which are the true sacciform aneurisms, and sometimes the mixed aneurisms.

Most frequently the coats are thinned, soft, they collapse like the varicose veins, whilst in true cylindrical aneurism, the coats have some thickness, and if they are divided perpendicularly to their axes, they remain patulous. An artery which is affected with varix resembles much a varicose vein, and may be mistaken for it, if the injection and dissection up to the principal trunk does not show the nature of the organ upon the living subject. Finally, the distinction may always be easily established by the pulsations which varicose arteries exhibit.

After having thus made known the different kinds of true aneurisms, the author deduces from his researches upon the character of this disease rules for its treatment. He endeavours to prove the inutility of surgical operations in this case, and the advantages which may be promised from the use of medicinal means.

The second memoir is devoted to the consideration of mixed aneurisms, and the observations which it contains seem to place beyond doubt the existence of a species of aneurism, long since pointed out, and the possibility of their occurrence admitted rather from the simple experiments of Haller upon animals, than from any well-observed clinical facts; and therefore pathologists have refused to believe in the reality of this morbid alteration.

According to M. Breschet, these aneurisms consist in an extension of the internal tunic of an artery, and in the passage of this coat through the apertures formed by the destruction or by the rupture of the fibres of the middle coat of the vessel. Thus, this aneurism imitates in some respect a hernia: it is this species that has been observed upon many different subjects, but it has not been perceived until after death.

This kind of aneurism does not appear singly, that is to say, that many aneurismal tumours are generally found on the same individual in different parts of the arterial system. This mixed aneurism corresponds most frequently with an alteration of the arterial parietes to a greater or less extent, and sometimes in the whole length of a limb, that which excludes the employment of every ligature, and even of amputation; for it is more than probable that the arteries of the splanchnic cavities are, in some points, affected with the same alteration.

The third memoir presents an elaborate history of varicose aneurism, and of the best method of treatment. From the facts detailed in this memoir, M. Breschet thinks that it may be concluded, 1st, that in the vascular lesions known by the name of *varicose aneurisms*, the instrument wounding through the vein which embraces the artery, happens to open the last.

2d. That there results from this lesion, sometimes only a varicose aneurism; sometimes with this aneurism is formed a false, diffused aneurism.

3d. That in varicose aneurism the anterior wound of the vein heals; but the posterior wound remains gaping, and that its borders contract an adherence with the artery, whose wound, as that of the vein, continues open.

4th. That the blood of the artery, at each systole, passes into the vein, distends it, particularly above the wound, and that, by its passage, a peculiar hissing noise is produced.

5th. That the blood of the vein passes into the artery at the time of its diastole, and that from this passage, observed upon the living subject, results most frequently the varicose dilatation of the artery in its course below the wound, the weakness of the pulse, the weakening or thinning of the parietes of the vessel, the diminution of the temperature, of the sensibility, of the mobility of the parts situated between the wound and the capillaries, whence they fall into a sort of torpor similar to asphyxia.

6th. That if these symptoms do not occur, the disease should be abandoned to itself, or the treatment should be limited to the use of a slight compression upon the limb, and upon the point corresponding to the wound.

7th. That if the serious symptoms, which have just been enumerated, should be developed, and become more violent, it is necessary to have recourse to a surgical operation.

8th. That this operation should not be limited to the use of the simple ligature between the heart and the wound, according to the method of Anel or of Hunter, because the blood returning by the inferior mouth of the vessel would reproduce the disease, particularly if the wound be recent.

9th. That this operation ought not to consist in the ligature of the artery below the wound, and in the separate ligature of the vein above this same ligature, because it would expose the patient to various inflammatory symptoms, and to the development of false circumscribed aneurism, or of false diffused aneurism.

10th. That it is more fit and more sure to place the lesion of the vessels between two ligatures, because in acting thus not only the blood is prevented from returning by the inferior end of the artery, and of reproducing the disease, but also because it opposes the entrance of venous blood into the artery, and the stupor into which this black blood throws the tissues, a stupor which is greater, and more easily followed by gangrene, because the red blood arrives in less quantity, and with more difficulty, into the same organic tissues.—*Archives Générales and Revue Médicale, October*, 1832.

—

29. *Wound of the Heart.*—In the *Journ. Hebdom. No.* 97, there is related the case of a man, who, on the 29th of January, plunged a large kitchen knife into his own chest, between the fifth and sixth ribs, on the left side, a few lines from the sternum. He fell down insensible, and in that state was carried to the Hôtel-Dieu. Soon afterwards symptoms of great collapse came on; pulse scarcely perceptible; the patient could not be roused to answer questions; air entered and escaped freely from the wound during the act of breathing; but little

blood was discharged outwardly at least. By suitable treatment these symptoms were relieved. The following day reäction came on, the patient was bled and purged, and by the end of a week he was so much better that he thought that he could leave his bed. On attempting it he was seized with dyspnœa, a palpitation, and extreme anxiety. He was bled with temporary benefit. The pain at the extremity of the ensiform cartilage became very severe, occasional delirium supervened with dyspnœa and diarrhœa: these were followed by chills at midnight, increasing difficulty of respiration, &c. and on the 27th of February the patient died. On post mortem examination, there was found a transverse wound of the anterior surface of the right ventricle, five lines long and half a line in depth. There was also the usual marks of inflammation in the heart and pericardium. This case is interesting as an additional proof to those already existing, that wounds of the heart are not necessarily, and certainly not speedily fatal in all instances.

—

30. *Aneurism by Anastomosis of the Temporal Artery.*—This form of aneurismal tumour has not been hitherto sufficiently attended to by the greater number of pathologists, although it is not rare in its occurrence. It happens particularly when an artery divides itself into a great number of branches within a short space. I have observed it most frequently in the branches of the occipital and temporal arteries. In every case, the disease had arisen in very young subjects, which leads one to suppose that they were usually caused by "vitium primæ formationis." In the commencement the disease is manifested by many parts near one another being affected by sensibly strong pulsations, which, upon close examination, manifestly corrrespond to the course of the branches of an artery. When the disease progresses further, it changes its original form. There arises, on the more strongly pulsating points, knotty swellings, which approach more or less to each other, and, according to the degree of their extension, form variously sized and irregular tumours, until, from further extensions, it at length forms a cluster-like swelling.

These aneurisms are accompanied with many difficulties and dangers, when they have been allowed to increase uninterruptedly, which especially appertain to the disease in question.

With respect to the curative means, I have since many years experienced that the ligature of the trunk of the affected arteries was frequently insufficient to the attainment of the proposed effect, particularly when this disease affects the branches of the temporal and occipital, owing to the free anastomosis of the frontal, temporal, and occipital branches with each other, and with those of the opposite side, supplying the aneurism with the quantity of blood which was intercepted by the ligature of the trunks.

Another circumstance also causes the ligature of the principal artery to be unsuccessful, that many of those small tumours have acquired such a degree of self-existence, *(selbständiges lebens,)* that the adhesive inflammation consequent on the operation is not sufficient to cause the obliteration of those tumours. More certain results from this method are only to be obtained by applying ligatures on not only one trunk, but upon all those which supply the aneurism with nourishment; an operation which would be extremely painful, and might be dangerous, from the violent inflammation of the scalp.

I have, instead of this operation of tying the trunk, adopted another method, in every aneurism of this kind where pressure could be exercised upon an immediate long surface, and always with the best success; which consists in making a deep incision of tolerable length in the middle of the aneurismal swelling, particularly in that part where the tumours pulsate most strongly, are most numerous and projecting, and in that direction which cuts through, in the one incision, the greater number of those tumours; the operator must instantly arrest the violent hæmorrhage in the manner hereafter described. Both steps of this operation are much less painful than the tying of the principal artery or arteries, where such careful dissection is necessary, &c. This method preferred

by me is much more certain in its results, inasmuch as it is performed upon the affected part, and thereby causes the adhesive inflammation to be much more perfect; further, it renders unnecessary all secondary operations, and, under ordinary circumstances, the cure is effected commonly in the short space of some weeks.

The history of the case which has given rise to the preceding observations, and which was witnessed by Von Walther and other foreign physicians, is as follows:—

A boy, aged ten, of a scrofulous habit, suffered a good deal during the last four years, (probably from his birth,) from painful throbbings in the right temporal region. On examination, I found there an elastic and very unequal swelling projecting somewhat more than an inch, and towards the circumference rather firmer; the only tumour which pulsated strongly ceased to do so on firm pressure, which caused pain, but whereby the bones could be plainly felt, and the parts reäcquired their normal condition; the point of the tumour occupied the middle of the parietal bone, from which point it extended itself on all sides in a circle whose diameter was at least four inches.

From this tumour the head had the appearance as if the right half were larger than the left. When the hair was removed, the patient fixed, and the apparatus for arresting the hæmorrhage was ready, I made an incision in the tumour from before backwards, three inches long, by which the greater number and largest of the aneurismal tumours were cut across. A quantity of arterial blood was lost; but immediately a soft sponge, extending beyond the edges of the tumour, was firmly pressed, and the pressure was continued some seconds with undiminished vigour, so that the lips of the wound and contiguous parts were emptied of blood as much as possible. Whilst the operator had one hand engaged by exercising pressure on the sponge, he seized with the other a tolerably large compress, removed the sponge, and at the same moment applied the compress, before hæmorrhage could again occur, between the lips of the wound, and then covered the whole tumour with a sponge extending beyond its edges, of about one inch thick, which was made fast by means of adhesive straps and a bandage. After some hours I diminished the pressure which at first was necessary, by undoing some of the folds of the bandage.

On the second day the sponge was replaced by compresses, in order not to cause either too much pain or inflammation by immoderate pressure. Very slight antiphlogistic measures were necessary to subdue some pain and fever consequent on the inflammation.

On the seventh day the compresses were separated by a copious suppuration, and the wound soon healed, its edges being brought together by adhesive straps. No secondary hæmorrhage took place. There was not the slightest trace of pulsation in the circumference of the tumour, and the pain and swelling had entirely disappeared.—*Lond. Med. and Phys. Journ. April*, 1833.

—

31. *Aneurism of the Thyroid Gland, cured by Ligature of the two Thyroid Arteries.*—This operation, although proposed at an earlier period, was firmly established on principle, and successfully performed in 1814 by P. von Walther. It was first performed in Berlin, in 1819, at my hospital. When the gland, as in some cases, must be removed, owing to its size impeding respiration, the operation for its total extirpation is rendered the more difficult and dangerous; and therefore the indications for putting Walther's method into practice should be sought after with the greater zeal: this method is peculiarly fitted for the removing of the aneurismal state of the gland, as is proved by the following case.

An officer of the Prussian army suffered, according to his own statement, during the last six years, but probably since his childhood, from an enlargement of the thyroid gland, which latterly rapidly increased in size, so as, from its great weight, &c. to render him wholly unfit for service. The pulsations of the thyroid arteries, which were considerably enlarged, could not only be

felt, but seen distinctly; the surface of this soft, elastic, and uneven tumour was covered by numerous varicose veins of considerable size, and pulsation to a greater or less degree could be perceived by the least pressure on any part of the tumour. It extended from the superior margin of the thyroid cartilage down to the sternum, and its extent from side to side was such as to leave the mastoid muscles uncovered only at the superior extremities: it protruded forwards to the same extent as the chin. The voice was greatly impaired, and much inconvenience to the head arose from it; even slightly sudden motions were attended with a painful difficulty of breathing.

Under these circumstances, my patient was determined to undergo whatever might diminish his sufferings: and accordingly I performed the operation on the 19th of July, 1831. I commenced the incision at about the anterior edge of that part of the mastoid muscle which corresponded with the superior thyroid artery, immediately over the tumour, and continued it about two inches backwards, dividing the skin and platysma together. Having separated the edges of the wound, I succeeded, with a blunt instrument, in exposing the trunk of the artery: it appeared to be three or four times larger than natural, and pulsated violently. On the application of the ligature, the pulsations of the artery ceased entirely, and those of the tumour were considerably diminished. The operation on the opposite side was performed in precisely the same manner: indeed, the pulsation did not cease to the same degree; but, after some minutes, a remarkable and a manifest flaccidity of the entire gland took place.

Both wounds healed by first intention, excepting, of course, the track of the ligatures. The ligature of the right side came away in eight days; that of the left in ten days. In proportion as the adhesive inflammation, (*obliterende entründung,*) extended itself from the parts operated upon to the gland, in the same ratio did the pulsation of the latter become more and more indistinct, and the circumference of the tumour, which itself felt firmer, was greatly lessened in extent.

On the eleventh day after the operation, arterial hæmorrhage occurred, though the wound was scarcely so large as would admit a pea: the hæmorrhage was of that kind which we see sometimes occur after operation for aneurism. It was stopped by pressure of the finger, and afterwards by a graduated compress applied by means of adhesive plaster; however, notwithstanding, it occurred periodically until the fourteenth day, five times. By means of the blood effused in the cellular tissue in and about the wound, a perfect cure ensued, and the patient was perfectly recovered on the fifth week. The tumour then had lost two-thirds of its circumference, and pulsation had entirely ceased. The patient asserted that he was altogether free from every former inconvenience, and that he could wear the ordinary regimental collar without its causing, in any motion whatsoever, the slightest inconvenience; he therefore returned to his regiment at Magdeburg. A short time since, (in February 1832,) eight months after the operation, I heard from him, relative to his continued enjoyment of good health.

In the only other case in which I performed this operation in 1819, its result is directly opposed to this latter case, the tumour having completely resisted the operation of tying the artery, and, from the extreme danger its extreme size caused to the life of the patient, it was necessary to remove it entirely. During the operation, the whole anterior side of the neck, with trachea and the right carotid artery was exposed: a portion of the gland was situated behind the larynx, and thirty-five arteries were obliged to be tied before the hæmorrhage could be stopped. (See *Tractatus de Glandula Thyroidea*, &c. by A. Hedenus, Leipsic, 1822, p. 276.)

The cause of such different results should next be inquired into. In the first case, that of 1819, the aneurismal condition was manifestly present, but only, as I conceive, as accompanying the enlargement of the gland; the enlargement of the vessels progressed equally with the hypertrophy: whereas, in the latter case, the enlargement of the vessels evidently predominated, so that the enlargement of the affected organ was only conditional thereto. The thyroid

arteries, in both cases, were enlarged, but those of the latter considerably more so, judging from their stronger pulsations, and also that the pulsations were distinctly to be seen. Without doubt the pointed out and symptomatically established differences account principally for the contrary results of the operations.

The difference in the manner of performing the operations might have certainly contributed somewhat to it.

In the first case I only tied the stronger pulsating artery of one side: in the latter, one on each side which caused a greater diminution in the supply of blood, and an inflammation of greater intensity and extent, owing to the additional incision and ligature.—*Lond. Med. and Phys. Journ. Feb.* 1833.

—

32. *Case of Ruptured Bladder.*—A very interesting case of this accident was recently brought into the Hôtel-Dieu, and afforded to M. Dupuytren another occasion, for the display of his astonishing diagnostic talent. A young man, æt. 25 or 30, was brought into the hospital labouring under the following symptoms. Face shrunken, extremities cold, pulse hard, small and frequent; and violent pain in the hypogastric region, which was likewise very much swollen. He stated that after having drank a large quantity of white wine with one of his comrades, a dispute had arisen, and he had received a violent kick in the lower part of the abdomen, which was soon followed by a discharge of blood from the urethra. Under these circumstances, M. Dupuytren pronounced the existence of a rupture of the bladder, and stated that death in a few days must necessarily ensue. He had seen several similar cases, and in all, death took place either on the fourth or sixth day after the occurrence of the accident. Nevertheless, every attention was shown the patient, he was copiously bled, and placed upon an absolute diet, general baths as well as semicupiæ were also resorted to. By these remedies his condition was so much improved, that M. D. began to think that he had been mistaken in his diagnosis, and that a cure would eventually take place. About this time one of the patient's friends very imprudently brought him some sweatmeats, and other articles of food, of which he partook immoderately. He had scarcely swallowed them, when symptoms of an acute peritonitis made their appearance, and in about thirty hours afterwards, he was a corpse. This took place on the seventeenth day from the occurrence of the accident.

Autopsy.—Upon opening the body, two ruptures situated on the anterior portion of the bladder, one of which was an inch and a half in length were discovered. There was also an effusion of urine mixed with pus, occupying the inferior pelvic straight. Those convolutions of intestine which were in the neighbourhood of this effusion, were found adhering to each other, and there were also traces of adhesions between the intestines and bladder. This viscus was empty, small, contracted, and equalled in size a small pear. There were no traces whatever, of the previous existence of a general peritonitis.

This case should particularly attract the attention of the medical jurist. It goes to prove that a kick upon the hypogastrium, at a time, when the bladder is full, may produce a rupture of this organ, and cause in all probability death in the space of two or six days from the occurrence of the accident; and although the case is probably unique in its phenomena, it nevertheless shows, that a rupture of the bladder, may not only be unaccompanied by dissolution, but that even a cure is not impossible. If the patient had not committed the imprudence of eating too much, and in this way excited inflammation of the parts, in eight or ten days more, the adhesions would have been strong enough to prevent any effusion of urine. Hitherto, all persons injured in a similar manner, have died previous to the sixth day; here, moreover, the patient lived until the seventeenth after the occurrence of the accident, and seemed to be in a fair way of recovery.

—

33. *New Hemostatic.*—Hitherto we have only known either chemical or me-

chanical means for arresting such hæmorrhages. It appears, on the contrary, that, by Binelli's method of treatment, which we recommend to the notice of our contemporaries, there is exercised upon injured blood-vessels, and upon the blood issuing from them, a nearly indirect tonic, (*unmittelbar dynamischer,*) influence; by means of which, hæmorrhages are stopped without ligature or compression of any sort, without the use of the known conglutinations, astringents, or caustics, and does not cause any of those changes of the wounded vessel which we generally see arise after the application of the ligature, or of powerful chemical caustics. The means discovered by Dr. Fidele Binelli for effecting this purpose is a clear and perfectly transparent water, almost tasteless, having a slightly empyreumatic odour, in which the senses cannot perceive any distinct chemical agent; namely, neither an earth, a salt, an alkali, an acid, nor a metal. The first public trials, to prove the efficacy of this water in arresting hæmorrhage, were instituted in Turin, in 1797, by order of the government; the results of which were considered favourable. Soon after, Binelli died, and the secret for making this water also perished. In the years 1829 and 1830, the successors of Binelli affirmed that they had again discovered this secret, and new trials were instituted, at which I was prevented from being present by an accident which occurred to me during my travels in Italy that year.

The information I received respecting the results of those experiments was highly favourable; rather too much so, in order that I should place implicit confidence in them. I returned to Berlin, taking with me a small quantity of the "aqua Binelli," and waited patiently for a suitable opportunity to put it to the test of experience, which was accidentally afforded me in the form of a small unimportant wound, followed by a slight hæmorrhage. I was so surprised at the effects of this water, when applied to the wound, that I requested my friend, Dr. Karper, an Italian physician, to send me, through the Prussian ambassador residing at Turin, a considerable quantity of the "aqua Binelli," in order that I might be enabled to make further experiments. When I obtained it, I was enabled to make other trials; the results of which are detailed in the following compressed notice.

In the first place, I tried its effects upon wounds of the larger blood-vessels of animals. I exposed various blood-vessels of young cats: in one, the femoral artery; of another, the same, with its accompanying vein; of another, the carotid artery; and, lastly, the same, with the internal jugular veins. These were cut differently, some longitudinally, some obliquely, some transversely, and others completely across.* The violent hæmorrhage hereby induced yielded, without exception, and without any other means being employed, so soon as a charpie or lint, steeped in the "aqua Binelli," was applied and pressed moderately against the wound for five or ten minutes. Encouraged by this success, I selected larger animals for the same experiments, such as dogs and sheep, at which Professor Rudolphi, Dr. Schulz, physician general, Drs. Urebel, Büttnerr, Bahn, and Mr. Halbach, veterinary surgeon-in-chief, and many others, were present. The results from the latter were as favourable as those from the former: neither injurious inflammation, nor any other prejudicial reäction of the constitution, were remarked; the cicatrization of the wounds proceeded regularly, and all the animals experimented upon perfectly recovered.

Further encouraged, we determined on trying its effects upon man: 1st, (before the assembled class, in the operating theatre,) after amputation of a finger, where the two digital arteries emitted blood very freely. 2d. In a case of a wound of the hand, caused by a cutting instrument, which entered deep between the metatarsal bones of the thumb and indicator finger, and where the hæmorrhage could not be arrested by means of compression, or the tourniquet, without the fear of causing gangrene. 3dly. After the extirpation of a

* It is proper to state, however, that we have seen the femoral artery of a dog entirely divided with a sharp bistoury, and very trifling hæmorrhage followed, although *no means whatever* were had recourse to, to restrain the hæmorrhage. In two days the animal appeared in perfect health and strength.—*Editors.*

hardened inguinal gland, from which a parenchymatous hæmorrhage ensued. 4thly. After amputation of the thigh, on account of a scrofulous knee-joint: after the operation, the blood issued with great force, on the least relaxation of the tourniquet, from the crural, perforating, and other muscular arteries, also from the vein. In each case the hæmorrhage was quickly and permanently arrested by the "aqua Binelli," without any other aid, and did not cause the least pain on its application, nor produced any discoloration on the surface of the wound; neither eschar nor any other local or general disagreeable effect.

The apparent, remarkable, and quite peculiar effect of the water merits all our attention, as an important object of the healing art may thereby be obtained. Our experiments excited a very lively interest, particularly so as we had not hitherto succeeded in our investigations as to the composition of this water. When all my efforts to discover its composition by various chemical reägents were fruitless, I requested experienced analytical chemists to undertake a more searching investigation of it. Drs. Lindes and Runce, professors of chemistry, Mr. Kleist, chief apothecary, and some others, notwithstanding all their efforts, came to the conclusion that, by chemical analysis, neither alkali, salt, acid, nor a metal, can be discovered in the "aqua Binelli." Whether hereafter the celebrated Berzelius, and other chemists, to whom some of the water has been sent, will succeed in discovering its composition,* remains to be determined.

I have received, from various places, waters possessing an empyreuma, and corresponding in external appearances with the "aqua Binelli," but which, when tried on animals, proved wholly inefficacious.

With respect to the most essential organic changes observed after the employment of this water, I shall for the present only communicate the appearances presented on two post mortem examinations. The above-mentioned case of amputation afforded the first opportunity, having died the tenth day after the operation. (This patient entered the hospital suffering under violent hectic fever, caused by phthisis ulcerosa pulmonum, and profuse suppuration from a fistulous opening at the knee-joint: the operation was only performed at the extreme and urgent solicitations of the patient himself.) The second was the carotid artery of a horse, which was cut in the direction of its axis, by Dr. Hertwig, and cured by the "aqua Binelli:" the horse was killed fifteen days after the experiment.

A lithographic drawing is attached to the annual report, representing the stump, with the artery and two veins, (femoral and saphena,) laid open for some inches of their length. The extremity of the artery is perfectly closed by a thrombus, which is cone-shaped and three inches long. A similar, but much shorter coagulum was found in the femoral vein, its cone, or upper extremity, only reaching the nearest valve; from which point another thrombus arose, many inches in length, having its cone at this valve, and its larger extremity towards the heart. The thrombus formed in the saphena vein was similar to that of the artery in every respect. The parietes of the vessels were neither thickened, swollen, nor, on their external side, enclosed by coagulated lymph, as Perot has observed to be generally the case after the obliteration of arteries by ligature. The internal side of the vessels only differed from the normal state by presenting delicate transverse bands, like folds, which were particularly distinct in the artery, and extended somewhat higher than the upper extremity of the coagulum.

A section of the artery of the horse is also represented, showing a coagulum which completely fills the artery to the same extent as the original longitudinal section, thereby closing the wound, and terminating, cone-shaped, at either extremity, above and below the wound.

We refrain from laying before our readers further information at present upon this subject, until all the analyses undertaken to discover the composition

* Berzelius has failed.

of the "aqua Binelli" shall be completed, and a greater number of comparative clinical observations shall be collected.—*Lond. Med. and Phys. Journ. Feb.* 1833.

—

34. *Prolapsus Ani.* Extract from a clinical lecture by Baron Dupuytren.—Prolapsus ani consists of an eversion of the inner membrane of the rectum, which, forming a kind of invagination, descends within itself, and at length projects beyond the sphincter to the extent of two, three, four, five, or even six inches. Usually the intestine comes out every time the patient goes to stool; in other cases it descends only when the patient has remained in the standing posture for a long period; while, in other cases, the gut may become everted at any time, which shows that the relaxation is carried to a great extent, and that prolapsus takes place without any effort on the part of the person affected. In general the gut is easily returned; but sometimes the sphincter ani produces such a degree of strangulation, that the projecting membrane becomes at first dark-red, then black, and at length falls into a state of gangrene. Should you happen to see such a case of strangulation as I have described, you are to endeavour to reduce the gut in the following manner:—The patient must lie on the abdomen, and the pelvis must be raised conveniently by pillows placed between the thighs; some pledgets of wet lint are then to be placed round the base of the tumour, and gentle pressure exercised in order to reduce its volume. After this a compress should be placed on the centre of the orifice of the intestine, which is to be returned by gentle pressure into the abdomen. When reduction by this means is altogether impossible, we may be compelled to have recourse to scarification of the gut, but as the employment of cutting instruments may be attended by ulceration or inflammation of the large intestines, they are to be avoided as much as possible. The same observation is applicable to the use of leeches, which may be followed by external or internal hæmorrhage, ulcerations, &c.

"But, though the reduction be accomplished, we have still to combat the tendency to prolapsus, which depends on the weakened action of the sphincters, or perhaps on certain causes producing strong contraction of the muscular fibres, inverting the large intestines, such as chronic inflammation. In the latter case, our first care will be to combat the inflammatory action, which gives rise to the disease; but when the prolapsus depends on a want of action in the sphincter ani, the best method of cure is that which has for its object the diminution of the cutaneous and mucous parts which surround the anus. The practical question to consider is, how can we best assist the action of the sphincters? Cold baths alone are frequently sufficient for this purpose; but the remedy is tedious, expensive, and requires constant attention. A better mode consists in removing some of the folds of skin, which surround the margin of the anus, so as to diminish the extent of the soft parts which dilate when the patient goes to stool, and to determine adhesion between the skin and neighbouring parts. When the patient is placed in a convenient posture, the operator, holding in his hand a common forceps, (with the points rather blunt, so as not to pinch the skin,) seizes successively several of the folds of skin which surround the margin of the anus in a radiated manner, and with a scissors curved upon its flat side, he excise several of these folds as far as the margin of the anus, or even two or three lines further; if the prolapsus be considerable, and of long standing, it will be necessary to extend the excision an inch within the anus; the sphincter ani must not be touched, as the operation concerns only the external tissues."

M. Dupuytren has never seen any hæmorrhage or unpleasant circumstance accompany this. The pain of the operation instantly occasions a strong contraction of the sphincter ani, and the inflammation extends for a slight way to the neighbouring tissues. Usually there is no stool for the first few days after the operation. About the eighth day the inflammation begins to subside, but the excretion of fæcal matter continues to produce pain and violent contraction

of the sphincter ani. M. Dupuytren has never seen the prolapsus reöccur after the operation.

At the conclusion of the lecture, the Baron proceeded to operate in the manner he had described, upon a young child of three years and six months old. The gut projected about three inches beyond the margin of the anus, and came down every time the boy went to stool. M. Dupuytren having returned the projecting bowel, nipped off with the scissors four or five bridles of skin round the margin of the anus. The little patient lay perfectly quiet, and seemed to suffer so little pain, that immediately on getting up he offered to the Baron an orange, which he had received to keep him quiet, and pronounced his "adieu" with an undisturbed voice.

4. The boy lively, and seeming to suffer little or no pain. A plug has been placed on the anus, and supported by a bandage. No stool since the operation.

5. The little patient seems to suffer some pain to-day when he moves, but is otherwise quite well; has passed two stools since the last visit. The gut has not descended, or even approached the margin of the anus.

7. No descent of the gut; goes to stool regularly, but seems to suffer some pain.

11. The uneasiness has gradually diminished; no accident of any kind has occurred, and the boy was dismissed to-day apparently perfectly cured.

29. To-day the boy was brought by his mother to be examined at the hospital. There had been no return of the prolapsus, or appearance of the internal membrane at the anus, although for the last few days the child had been affected by a diarrhœa, which compelled him to go frequently to stool, and occasioned much straining.—*Lancet, April 27th*, 1833.

—

35. *Amputation at the Coxo-femoral Articulation.* By M. Blandin.—The patient, a girl, æt. 15, was brought into Hospital Beaujon, on the 25th of last January; she presented as yet none of the phenomena of puberty, and her general health seemed to have undergone no material alteration, though the experienced eye could easily recognise the melancholy ravages, that long and continued suffering had already effected. The right knee was found tremendously hypertrophied, being nearly four times its normal size, the tumefaction gradually diminishing both in the leg and thigh, though in the latter it extended nearly as high up as the base of the great trochanter. She suffered the most excruciating pains, from which only momentary relief could be obtained by the exhibition of powerful anodynes. The skin covering the joint was much thinner than natural, had apparently lost its elasticity, and seemed ready to burst, so great was the degree of distention. A number of veins considerably dilated, could be traced by their blue colour, lying immediately beneath the surface. The leg itself was exceedingly atrophied, scarcely any vestiges of the soft parts remaining; thus forming a striking contrast to the superior portions of the member. The evening of her entry into the hospital, in consequence of some movement executed whilst lying in her bed, a cracking noise was produced, and upon examination, it was found that the os femoris had been fractured near the junction of its middle and inferior thirds. In a short time the swelling increased in a very sensible degree, accompanied by the most violent and acute pain; the slightest touch drew forth from the patient, the most piercing cries, and it seemed impossible for her to support such agony, for any length of time. M. Blandin now saw the patient for the first time, and after an attentive examination of her case, declared, that the only remedy left was amputation at the hip-joint. The patient was, however, at this time, in a state of such extreme nervous excitement, that the operation was deferred until the next morning. In the meantime, anodynes were administered both externally and internally, by which means a slight degree of calm was produced. M. Morjolin also saw the patient, and concurred with M. Blandin in the opinion, that but one course remained to be pursued; viz. amputation at the coxo-femoral articulation. Accordingly the operation was performed on the 28th of January, by M. Blandin. The patient was placed in the position recommended in similar cases, and which it would be useless to des-

cribe. The femoral artery having been first tied almost immediately at the crural arch, M. B. proceeded to form his internal flap, from the integuments and muscles of the inner face of the thigh; several large vessels were of necessity divided, these were immediately secured by the ligature, and among the rest the femoral vein, from the quantity of blood which escaped from it, was obliged to be tied, though very much against the inclination of M. B. who dreaded the consequences usually attendant upon the ligature of large veins. The joint was next opened, and an external flap much shorter than the internal one, formed of the muscles on the external face of the thigh. The parts were then brought together by sutures and adhesive straps. The operation was most skilfully and dexterously performed. It were worse than useless to enter into a detail of the subsequent treatment of the case, as it was entirely pro re nata, suffice it to say, that on the eleventh day after the operation the patient died, whilst labouring under all the symptoms of hectic.

Autopsy. The femoral vein was found inflamed at no point, except that operated upon by the ligature, which *had not divided its coats*, and was filled with clotted blood as high up as the superior straight of the pelvis. The internal iliac vein at its point of origin, was evidently inflamed, and contained pus; its internal membrane near the origin of the vessel was softened, whilst higher up it was of a vivid-red colour; the redness ceased at its point of junction with the external iliac. The blood which it contained was very fluid, and of a black colour. The substance of the lungs, particularly that of the right, contained numerous grayish spots, composed of a matter resembling that of tubercles in a softened state. The patient never having suffered from any affection of these organs, and presenting none of the attributes of the scrofulous diathesis. M. B. concluded, and based his opinion upon numerous similar cases, that the spots were in reality composed of pus, and that it was there deposited through the medium of the general circulation. A c. nstance favouring this conclusion is, that the liver likewise contained similar points, and according to the experience of M. B. the liver next to the lungs is the organ most subject to the purulent depositions alluded to, in cases of phlebitis.—*Transactions Med. Dec.* 1832.

—

36. *Extirpation of a Tumour weighing seven pounds developed in the Upper Internal Portion of the Thigh, followed by Death.* By M. Roux, Professor at La Charité.—The subject of this, a young man, æt. 29, of good constitution, had suffered from a tumour which occupied the superior internal face of the left thigh for five years, and which was accompanied by severe lancinating pains. When he entered the hospital, the tumour equalled in size an adult head, was of an oval shape, and extended from the fold of the groin to the middle of the thigh. Its base was large and immoveable, its tissue dense and resistant, whilst the skin covering it retained its natural appearance. It was difficult to decide positively, with regard to its nature; but M. Roux strongly suspected that it belonged to the class "Lupus," this suspicion was subsequently confirmed by an examination of the part. It having been decided that an operation was the only remedy that promised success, it was accordingly performed. The tumour was found located between the vastus externus, and a portion of the third abductor of the thigh, and firmly attached to the tuberosity and ascending ramus of the ischium. The necessity for preserving the above-named muscles entire, rendered the operation exceedingly difficult and tedious, and for fear of wounding important parts, it was performed almost entirely with the fingers of the operator, the knife being used only in separating the tumour from its connexions with the os ischium. During the operation a large artery was divided, but from the relative position of parts being so much altered, M. Roux was unable to decide whether or not it was a branch of the circumflex, or merely an artery developed in the tumour and destined to its nutrition. Although it was impossible to pass a ligature around it, but very little hæmorrhage resulted from its division. The crural artery passed without the range of the tumour, and could easily be separated from it. Upon turning out the first, another tumour about the size of the fist, likewise adhering to the tuber ischii, though entirely

distinct from the larger, was discovered and extirpated. The dressing was composed simply of compresses and rollers, appropriately arranged. Both tumours presented a similar organization, and were composed of a straw-coloured, homogeneous tissue, in which gelatine predominated, enclosed in a hard, resistant parenchyma, which gritted like cartilage under the scalpel. It had no analogy to scirrhous tissue, in which a marbled arrangement, and sometimes purulent cysts, and likewise encephaloid degeneration in numerous points, are discovered, but rather resembled the substance of uterine polypi. The larger of the tumours weighed nearly seven pounds. The patient died two days after the operation, apparently exhausted by the excessive pain necessarily dependent upon so extensive an operation.—*Ibid.*

—

37. *Cases of Diffused Inflammation after Bleeding in the Foot.—Case* 1. A young woman was ordered to be bled in the foot, at the Hôtel-Dieu, in consequence of amenorrhœa.

The operator made several attempts to open a vein at the external ankle, but failed; the saphena vein was afterwards opened. In a few days appearances of spreading inflammation of the skin and cellular substance showed themselves, and afterwards great tumefaction, pain, and general disturbance. Leeches and poultices were applied; but the disease became worse and worse, and the patient was delirious, and suffered much from vomiting, purging, and extreme sensibility of the abdomen. She was brought into the surgical wards on the 20th day from the commencement of the symptoms. Bleeding from the arm was immediately ordered, and two long incisions were made along the foot; much fetid and sanious matter flowed out; and a third incision was made at the upper and inner part of the leg, where a large purulent collection had formed. Thirty leeches were applied to the epigastrium. Gangrene of the back of the foot came on; and an intense inflammation had invaded the upper part of the thigh. Forty leeches were immediately applied to the part. A long incision was made on the outer side of the thigh. It was not till the end of the sixth week that the inflammation of the limb had entirely ceased; the tendons of the extensors of the toes sloughed off. In two weeks more most of the incisions had healed, and the large exposed surface of the foot was healthily granulating. In six weeks more, she was able to leave the hospital, but the limb as yet was little able to execute any movements.

Case 2. A woman chanced to prick her finger with a thorn; inflammation of the arm speedily came on, and also symptoms of extreme gastro-enteritic irritation. When she was brought to the hospital, three weeks after the accident, she could give no account of herself; the whole limb was enormously swollen, and all the signs of a very aggravated typhus were present. She was immediately bled, and the part leeched and poulticed. Five days after this date, she began to complain of pain in the knee: when it was examined, a distinct fluctuation could be felt; free incisions were made at several parts; but as the inflammation abated in the arm, it increased in the leg, and all the disturbance of head and abdomen was renewed; she died on the ninth day after entering the hospital.

Remarks.—The very formidable disease, which is illustrated by the two preceding cases, sometimes attacks the head, and is then not unfrequently fatal. It is of importance to observe that when the cellular tissue between the pericranium and the occipito-frontalis aponeurosis is the seat of the disease, and when it has gone on to suppuration, so as to detach the integuments from the subjacent parts, these integuments are not so liable to fall into a state of sloughing as the integuments of the extremities, and of other parts; and why is this? Because the blood-vessels, namely, the branches of the frontal, temporal, and occipital arteries are so very intimately connected with the skin of the head; whereas in the arm and leg, &c. the nutritious arteries of the skin are mostly small vessels which pass to it from the subjacent textures, and through the subcutaneous cellular substance; hence, when this web is destroyed by suppuration, the permeating arteries and veins are no doubt involved at the same

time: in the case of the scalp it is otherwise; for its vessels directly appertain to it, and not to the pericranium and bone. It is of much consequence to ascertain whether the pus has not injured the pericranium; for when this membrane is destroyed, recovery is very rare; and when it is not, we may very generally entertain better hopes. Even in the worst cases, the scalp seldom becomes lifeless or sloughs; and for the reason of the peculiar arrangement of the blood-vessels above-mentioned. M. Dupuytren has seen in his vast practice only two cases of actual gangrene of the scalp.—*Med. Chir. Rev. from Journ. Comp. Sept.* 1832.

—

38. *Two Cases of Hernia, in which the Operation was performed, although there were no External Swellings.*—A man, aged forty, had an inguinal rupture on each side; the one of twelve years, the other of three years standing. After a violent effort, the former, or that on the left side became suddenly enlarged and very painful: it was after some time reduced, but the symptoms of strangulation continued, and on the 5th day he was carried to the Hôtel-Dieu. The abdomen was very tender, and he suffered much from hiccup, fæcal vomiting, and pains of the bowels; there was no outward appearance of any herniary tumour; the abdominal ring when examined, were found more open than usual; there was no fulness in the right groin on the following day, and when the part was pressed, it was very painful. Dupuytren cut down cautiously to ascertain the state of things; he opened a small smooth-lined sac, from which a good deal of serum issued; but there was no trace of gut, or of omentum: when the finger was passed up into the abdomen, several adhesions could be distinctly felt. Dupuytren immediately operated upon the other side; the second incision opened a small sac, which contained a fatty mass, mistaken at first for omentum; but by making the patient cough, a layer was observed beneath it, and when this layer was divided, much bloody serum flowed out. Dupuytren was now satisfied that the strangulation existed upon this side, in consequence of the difference of the serum from that which was noticed on the other side. In the sac a small portion of inflamed omentum was found, and on introducing the finger up the ring, a circular bridle could be felt; the sac was gently pulled outwards, and along with it a small portion of gut; a probe bistoury was cautiously introduced, and this bridle was divided upwards and outwards. The patient ultimately recovered.

Case 2. A man was brought to the Hôtel-Dieu in an apparently dying state; he was hiccuping, vomiting, with cold extremities and tumid painful belly. It was with difficulty that he could tell that he had long suffered from a double rupture; but there was no outward sign of any swelling. The question was, whether the case was one of peritonitis, or of concealed hernia. Dupuytren ordered the patient to be bled, and to have repeated enemata given. Several copious alvine evacuations were procured, the vomiting ceased, but the hiccup continued. On the following day he was considerably easier and more collected, so as to be able to give some account of the progress of his malady. He had laboured under a rupture on each side for eleven years, they had never much incommoded him till the day before he entered the hospital, but suddenly after an exertion they became painful and irreducible for some time; both however were speedily returned by the taxis; yet most of the symptoms of strangulation continued. An incision was made over the right inguinal ring, and a smooth sac, which was recognised as a herniary one, was laid open; a grooved sound was passed upwards, and bloody serum then flowed out; the sac was drawn a little out, and its neck was found to be puckered, and drawn together like a cicatrix. It was divided, and the finger then might be easily carried inwards. The patient quickly recovered.

Remarks.—In such cases, as the above, are there any signs by which the surgeon can determine, after the reduction of a hernia, whether strangulation continues or not within the abdomen? The abdominal ring should be carefully examined, to ascertain whether it be large and open, whether any pain is felt there, when the finger is firmly pressed upwards and outwards.—*Ibid.*

CHOLERA.

39. *On the use of Cold Water in Cholera.*—By Dr. Hardwicke Shute, of Gloucester. (In a letter to the Central Board of Health.)—My attention was early directed to the fact, that no good, or rather as it appears to me most decided injury, was done by the administration of brandy, (or alcohol in any of its multifarious forms,) and even by the use of the stimulant emetics, when they were retained, as frequently happened in the advanced stages of collapse. In endeavouring to account for the deaths which commonly occurred in the course of a few hours, I was forcibly struck with the marked analogy which exists, as far as the state of the pulse and diminished animal heat are concerned, between the collapse of cholera and the impaired vital energy which results from starvation or long-continued exposure to excessive cold. Now it is an established fact in therapeutics, that the administering of a stimulus, disproportioned in strength or extent to the impaired vital energy of the system, is, under such circumstances, certain death; and that mortification of a frost-bitten extremity uniformly results from the hasty application of too great a degree of heat, or other stimulant, to the affected part. The treatment which I have adopted in the second and third stages of cholera is founded on the analogy already mentioned, and on the general principle that the necessity of diminishing or absolutely withdrawing every kind of stimulus is greater in proportion to the degree of collapse, or sinking of the vital powers.

The circumstance which particularly directed me to the remedy I employ, was the thirst, the excessive and inordinate desire on the part of the patient for water, for cold water more particularly, and I may almost say cold water exclusively; all other liquids being taken with reluctance, if not absolutely refused. I shall therefore state in general terms, that the free and unrestrained allowance of cold water, which, in the most marked cases of recovery, was taken to the extent of some gallons in a few hours, is the circumstance to which I wish particularly to direct your attention. If I add to this the abstraction of all kinds of stimulant remedies, both external and internal, even to the exclusion of friction, or the application of heat in any form, I have stated in general terms the whole plan of treatment, which, as I shall show, has succeeded in twelve out of fourteen, if not in twelve consecutive cases of the third stage of cholera. I am fully aware that the number of cases is too few to justify any thing like a general conclusion; but you will, I think, agree with me that they are not too few to justify a more extensive trial of the plan proposed. And it is with this view that I now address you; hoping that through your influence such trial will be made on a more extensive scale than is in the power of an individual.—I shall now mention some particulars which appear to me calculated to throw additional light on the plan of treatment I propose, it being understood that my observations apply to the *second* and *third*, particularly to the *third* stage of cholera, "when the pulse at the wrist has ceased, or become almost imperceptible."

The windows of the cholera hospital in Gloucester are large and numerous in proportion to the size of the apartments, and are open night and day. The doors open immediately into the garden, and are not suffered to be closed, so that the patients may be considered as living in the open air. I may add that the fires are purposely kept so low as to influence as little as possible the temperature of the room. The covering of the patients is confined to a light blanket and rug; and it seldom happens that some part of the body, particularly the breast and shoulders, is not constantly exposed. Under these circumstances, a pint of cold water is offered to the patient, and very frequently two-thirds of this are taken at a draught. In what I consider the most favourable cases, vomiting is almost immediately produced, and the patient in two or three minutes again calls for and eagerly drinks the same quantity with the same result. This i often continued for hours, until gallons of water have been taken, and the

greatest proportion, (but I conceive not all,) rejected by vomiting. In other cases the patient is too insensible to ask for the water; and under these circumstances, it is offered every ten minutes or quarter of an hour, and most commonly drank with avidity. If gruel or tea be offered, the patient most frequently refuses it, and generally speaking no kind of nutriment is taken in any form until the period of convalescence. I consider it of great consequence that the vital powers should be restored as gradually as possible; and it is of importance to remark, that the progress towards recovery has been in all cases remarkably gradual and uniform. In the first six or eight hours no amendment can be observed except some diminution in the purple hue of the extremities; in the next six or eight hours there is a manifest improvement in the countenance of the patient, and more disposition to sleep, but often no restoration of the pulse or increase of temperature. In some cases the pulse has not been perceptible for twenty-four or thirty-six hours. From this period the pulse, the animal heat, and the secretions are very gradually restored, and at the end of forty-eight hours, or the third day from the commencement of the treatment proposed, the patient is convalescent, and in all cases without consecutive fever. I mention these circumstances particularly, in order that the practitioner may not become impatient. He should, in my opinion, be satisfied, and make not the least alteration in the plan proposed as long as the patient is merely not getting worse.

It would be inconsistent with the professed object of this memorial to offer any remarks upon the pathology of cholera, or upon the *modus operandi* of the treatment here recommended. But I cannot refrain from briefly suggesting, first, the importance of knowing;—that in the collapsed stage of cholera, cold may be extensively applied to the coats of the stomach without diminution, to use the most cautious term, of the vital energy. Secondly, that cold so applied has a manifest tendency to check the serous secretion, or perhaps, more correctly speaking, excretion or exudation of serum, which characterizes the disease. Thirdly, the acknowledged effect of vomiting in checking diarrhœa, equalizing the circulation, and emptying the vessels of the liver, and consequently the importance of not checking a natural action which has a conservative tendency. Fourthly, the probable effect of the liquid absorbed by the stomach in restoring the fluidity of the blood; and the presumption that the saline treatment, both as applied to the stomach and by its use in venous injection, may owe its effect as much, probably more, to the fluid itself, than to the ingredients it contains. Fifthly, the great importance of the arterial circulation being restored as gradually as possible, and the fact of convalescence taking place without the consecutive fever, which so often proves fatal in the *fourth* stage—the stage of reäction.

This method of treatment I have used with success in twelve of fourteen cases, and I may say in twelve consecutive cases. The first case in which it was tried and proved successful, occurred about six weeks ago, soon after the first appearance of the disease in this city. In the four first cases of the disease which came under my notice, internal and external stimulants were liberally administered. The mustard emetic and bleeding were also had recourse to, and every patient died in less than twelve, one in six hours. I determined therefore, (having understood from my professional brethren that the saline treatment had equally failed,) to take the first opportunity of watching the disease uninfluenced by remedies, with the hope that I might thus ascertain, if possible, the natural effects of the constitution, if any, to relieve the disease. In the cases already mentioned, I had observed that the stimulants were taken with great reluctance, and in one instance of extreme collapse, when the patient was apparently unconscious of every thing, I was much struck by an earnestly-expressed desire, that no fire should be made in the room, directions to that effect having been given in her hearing. In two of these cases the thirst was, I observed, excessive, and very distressing to the patient.

Soon after this, I was requested by a medical gentleman of this city to visit

a female, fifteen years of age, whose father was at that time lying in the house dead of cholera. It was a marked case of collapse, with constant vomiting and purging of a fluid like rice-water. The pulse at that time, about one o'clock P. M. was scarcely perceptible. Calomel and opium had been previously given. I recommended a very liberal dose of opium, with various stimulant antispasmodics and olive-oil, and visited the patient again at seven o'clock that evening. The symptoms at that time were much aggravated—the vomiting and purging not at all relieved—the pulse imperceptible—expression of countenance cadaverous in the extreme. In despair, I recommended ten grains of musk to be given every hour, to the extent of two scruples; and left the patient with the impression, which was also that of the other medical gentleman in attendance who was with me, that she could not survive many hours. Having reflected upon the case, and still feeling anxious that relief, if possible, should be given, I returned in an hour with some green tea, and desired some to be made very strong and given. Whilst this was in preparation I visited the patient, and to relieve the thirst, which was excessive, presented a pint of cold water, the greater part of which was eagerly swallowed, and in less than a minute the whole was apparently rejected by vomiting. At this time I may observe, the symptoms were the same as last described. In two or three minutes after she *asked* for the water, which was drank, and immediately rejected as before. Having witnessed the continual repetition of this process for half an hour, (during which time the tea had been offered, and refused as soon as tasted,) without any increase of collapse, and with the satisfactory circumstance of a change in the voice, which had been highly characteristic of the disease, I left directions that cold water should be given to any extent which the patient might desire. I was informed the next morning that the patient had taken some gallons of water; had been constantly sick after each draught; but had not been sick, or asked for water the last hour. I also ascertained that the window, which opened immediately upon the bed, had not been closed the whole night. At this time there was no perceptible pulse or increase of temperature, but the countenance was, I thought, not quite so cadaverous in expression. The same plan was continued. In the middle of the day there was still no manifest improvement, but in the evening the pulse was perceptible. The next morning the pulse was decidedly improved, and on the following day the patient was convalescent, without any appearance of fever. If I have been tediously minute in the history of this case, I trust that it will be attributed to the great interest I must naturally feel in a case which terminated so satisfactorily, and which was the foundation of my future practice.

Soon after this, I was told by another medical gentleman that he was in despair, having lost seven cases of cholera in succession, and had just visited another, who, he supposed, would be dead before night; and that he had done nothing but ordered small doses of capsicum, with camphor mixture. I found this patient in a similar state to the last—recommended the unrestrained allowance of cold water—heard she was better the next day, and found her convalescent the following day, but with indications of fever. This circumstance, however, was accounted for by the fact of beer and cider, as well as cold water, having, through the prejudice of the attendant, been frequently given.

My experience, subsequent to the cases mentioned, has been confined to the Cholera Hospital in Gloucester, which was opened a fortnight ago, and placed under my superintendance, with the assistance of a resident surgeon. The first four cases sent to the hospital, which was then under my care, were all dead next morning. Since that period, of the forty-eight cases admitted, twenty-one have been discharged cured; eight I consider convalescent; eight are under treatment; and eleven have died. Of the eleven deaths, two might fairly be attributed to previous treatment, or other circumstances; three were in progress towards recovery, and relapsed from improper exertions on the part of the patients; two which were under three years of age, died under symptoms of cerebral congestion, after the pulse had been restored; one was more than sixty

years of age, another about fifty, and extremely emaciated from previous disease or starvation; in one, the case was too advanced to admit of the plan being tried; and in another the patient was a notorious drunkard, and died a few hours after admission, with a gin bottle concealed about her person. If due consideration be given to these circumstances, the deaths cannot, I think, throw any discredit on the practice. I may add, that in all the cases great allowance must be made for the effect of previous treatment, as being most commonly directly opposite to my views of the disease. My experience hitherto justifies, in my opinion, the following conclusions, viz:—That in all cases the progress towards death is retarded by the water treatment; that when the irritability of the stomach is excessive or unimpaired, reäction will be established in a very great proportion of the cases; and that when the natural powers of the constitution are not unusually weak from extremes of age or other causes, such reäction will be followed by an early convalescence.—Any suggestion from those who are much more conversant with the disease than myself, will be received with gratitude, and any question answered to the utmost of my ability.—*Edin. Med. and Surg. Journ. October*, 1832.

—

40. *Cholera without Intestinal Discharges.*—M. Girardin communicated to the Academy of Medicine of France, at their sitting on the 8th of January last, two fatal cases of cholera in which there had been no evacuations from the bowels. In one no post mortem examination was made, but in the other the intestines were found distended with the rice-gruel fluid; and, on tracing the rectum, it was ascertained that, for the extent of three or four inches, the gut was so much contracted, that a goose-quill could not be passed through it. Almost all the members agreed that these could not be regarded as cases of dry cholera, the discharges being prevented by the stricture of the rectum, and *none of them had met with any case of cholera in which the bowels were found empty after death.*

—

41. *Saline Injections in Cholera.*—"The well-known fact that, in cholera, the serous and saline parts of the blood are rapidly thrown out upon the mucous surface of the bowels, naturally enough suggested the idea of supplying the loss by direct injection of a sero-saline kind into the veins. To throw such a fluid into the stomach or bowels, where it was already in superabundance, and at a time when all powers of absorption are suspended,* appears the wildest and most absurd scheme that ever was invented, as the result has shown. Contrary to expectation, the saline injections were not only borne with apparent safety, but, in almost every instance, produced a speedy, and as it were, a resuscitating effect on the whole system, restoring the pulse, the temperature, and the plumpness of the body. The prospect was too flattering to be realized. Such a gigantic power over disease—it might be said over death, was more than nature would permit, and accordingly we find two important drawbacks on the new remedy. Either the fluids run off by the bowels with more rapidity than ever—or the head or lungs become oppressed, and death takes place in a different manner than by cholera. Of both these events we have seen the most unequivocal and incontestable proofs. While therefore we bear testimony to the astonishing—the almost miraculous physiological effects of the saline injections, we are reluctantly compelled to bear witness to the pathological phenomena which succeed. We are grieved to say that, in our opinion, a remedy is yet to be sought for the collapse of the epidemic cholera. Till this be found, our only resource is vigilant attention to the first stage or diarrhœa, with which the disease almost always commences, when a milder form of the flux does not precede. We are now to notice some communications from practitioners on the subject of saline injections.

"Dr. Lawrie, of Glasgow, whose able work on cholera we have already no-

* This belief, which is pretty generally entertained, that the powers of absorption are entirely suspended in cholera, appears to us to be unsupported by any well-established fact.—*Ed.*

ticed in this Journal, has stated the results of his observations in the Medical Gazette for June 7th, 1832. Following the directions of Dr. Latta, he injected from 70 to 150 ozs. within a few hours—and all his patients died, viz. six in number. In all of these temporary benefit was produced; 'but in several the fatal result seemed accelerated.' In one case he then tried the addition of albumen to the saline injection—in another the serum of bullock's blood—in a third, human serum—in a fourth, human blood—in two cases, small quantities of whiskey—in two, a few drops of laudanum—still *all* died. Dr. L. then began to suspect that the quantities injected were too large, and they were limited to 30 ounces at a time, thrown in very slowly, and carefully watching the effects. Under these precautions, four have recovered; 'but so many have died in despite of all precautions, so evidently injured by the practice, that I have now almost entirely laid it aside, as not only useless, but frequently hazardous.' Dr. L. injected 26 cases, 22 of which died! Dr. L. witnessed the phenomenon to which we have alluded—the drain of fluids from the bowels as fast as the injections were thrown into the veins. One patient made this remark—'as fast as you put water in my veins, it runs out by my stomach.'"—*Med. Chirur. Rev. Oct.* 1833.

42. *Influence of Putrid Exhalations upon Cholera.*—M. Double has made a report to the Royal Academy of Medicine on this interesting subject. When the cholera appeared at Blois, a physician of that town saw with fear that the workmen had unpaved the streets for the purpose of cleansing them; he feared that the removed earth might give rise to fatal or choleric exhalations, an observation which he thought had already been made at Paris. In consequence of which he wrote to the prefect, and the latter transmitted his letters to the minister, who sent them to the Academy to decide the question. Numerous researches were necessary to arrive at this solution: M. Double devoted himself with the greatest care to this subject; he described all the work of this kind which had been done in Paris since the origin and during the existence of the cholera; he has followed them from street to street in the different sections of the city; he has given all their dimensions; he has pointed out the nature of the several strata of earth which have been dug out, and after the removal of the earth, he has shown that the inhabitants of the streets where the excavations were made, as well as the workmen employed, have been without comparison more healthy than all the others. He supports this remark, both by the recent experience of M. Parent-Duchatelet, and by the observation made at Montfaucon, where persons are occupied in the most unhealthy work, and where notwithstanding very few of the workmen are effected. From these facts M. Double concludes that the exhalations which escape from animal matters are not near so dangerous as have heretofore been supposed, and that, even during an epidemic, the removal of earth which increases these exhalations can be made without danger; but that this however, should not restrain the administration, when peculiar circumstances should force it to defer enterprises of this nature. After an animated discussion, the Academy decided that the conclusion of this report should not be expressed in terms decidedly affirmative. However, the final drawing up of the report was entrusted to M. Double, and the report and his conclusions were put to the vote and were adopted.—*Archives Générales, September,* 1832.

CHEMISTRY.

43. *Aricine, Quinine, Cinchonine.*—Aricine was obtained by Pelletier and Coriol from a variety of Peruvian bark. Pelletier infers from a comparison of his analysis of aricine, with the analysis of quinine and cinchonine by Liebig, that the three may be represented by three grades of oxidation of a peculiar

base, composed of 20 carbon, 24 hydrogen, and 2 nitrogen. Cinchonine consisting of this base with 1 atom of oxygen, quinine of the same base, with 2 atoms of oxygen, and aricine containing 3 atoms of oxygen.—*Ann. de Chim. et Phys. Oct.* 1832.

—

44. *Chemical Analysis of Ergot.*—In 103 parts of Ergot, Mr. Wiggers, of Berlin, has found—

White oily matter	35.0006
Solid fatty matter, crystallizable, and of peculiar nature	1.0456
Cerine	0.7578
Fungous matter	46.0862
Ergotine	1.2466
Vegetable ozmazome	7.7645
Sugar	1.5530
Gummy extract, with red colouring principle	2.3250
Vegetable albumen	1.4800
Acid phosphate of potash	4.4221
Phosphate of lime, and traces of iron	0.2822
Silica	0.1394
	102.0930

There are some remarkable points in the preceding analysis. In the first place, the presence of vegetable ozmazome identifies the ergot with the class of mushrooms in which this substance forms a considerable proportion. In this ozmazome seems to reside the power which promotes parturition. The ergotine is insoluble in water, and seems, from the experiments of M. Wiggers, to be the principle in which the poisonous qualities of the ergot reside. On several animals it has operated as a powerful irritant poison, while the ozmazome produced no such effect.—*Lancet, from Alleg. Med. Zeit.* 10 *Nov.* 1832.

—

45. *Phosphuretted Hydrogen.*—Rose proves that the gas obtained by heating hypo-phosphorous, or phosphorous acid, and the hypo-phosphates, and which is spontaneously inflammable in the air, is a *base.* It ranks them with ammonia, as being a *basic* compound of hydrogen with a simple substance.—*Ann. de Chim. et Phys. Sept.* 1832.

—

46. *On certain Phenomena produced by Capillary Action.*—This is the title of an interesting paper by Dr. S. Magnus, published some years since in *Poggendorf's Annals*, and now translated for the *Annales de Chim.* &c. It contains a number of experiments on endosmose and exosmose of gases and of liquids, which in the author's view, result from capillary action. The first is an examination of the unequal penetration of gases through cracks in glass receivers, first noticed by Döbereiner. The results obtained are explained on Dalton's hypothesis, that one gas is a vacuum to another: an explanation inadmissible since the proof of the great *power* with which the permeation is effected, which is given by Dr. Mitchell's* experiments.

The corresponding phenomena of liquids begins with the infiltration of nitrate of copper into a tube, closed at the bottom by a bladder, containing pure water, and plunged into a solution of the metallic salt. This observation was made by Fischer,† of Breslau. In the course of the article an interesting experiment of Parrott is given, in which when a glass bottle was filled with alcohol, and the mouth closed by a bladder, and the whole surrounded by water, the water filtered into the bottle so as to inflate the bladder. Dr. Magnus concludes, that all these experiments can be explained by capillary action, if different liquids are supposed to have different attractions for each other, and have different powers of passing through capillary openings.—*Ibid. Oct.* 1832.

* Am. Journ. Med. Sc. Vol. VII. † Gilbert's Annals, Vol. 72.

AMERICAN INTELLIGENCE.

A Case of Compound Camerated Fracture of the Cranium, successfully Treated by the Removal of three pieces of the External Table of the Bone. By PAUL F. EVE, M. D. Professor of Surgery in the Georgia Medical College.—Opportunities for extensive observations on traumatic surgery being very limited in the United States, it would seem desirable that all interesting cases should be faithfully recorded, not for the mere gratification of rendering us somewhat independent of foreign sources for practical information, but for the more important advantage of testing in our climate and country, the principles laid down by European writers, and thus tending to establish medicine on a broader and surer foundation.

In the changes which surgical operations have been undergoing at the metropolis of the medical sciences, where, if a Broussais has introduced new ideas in medicine, a Lisfranc has not done less in simplifying surgery, injuries of the head have received a due proportion of attention; and it may now be considered a pretty well settled point, that the trephine is required in comparatively few cases. In the one which we propose relating, the relief afforded by nature in removing the symptoms of pressure arising from depression of the internal table of the cranium, is exhibited in a striking manner, and may be useful in preventing a too hasty and rash resort to instruments in similar accidents.

Saturday the 8th of June, near 8 o'clock, P. M. I saw, at the request of Dr. A. Cunningham, Professor of Theory and Practice of Medicine in our school, a black boy, of very athletic form and industrious habit, aged twenty years. He had received, about an hour before, a blow on the head from half of a common brick thrown by another boy at the distance of a few yards. When struck, he fell on the face, which was severely bruised, particularly the nose and forehead. The wound extended from near the coronal suture backwards, through the *left* parietal bone to about its middle. The scalp was lacerated to the bone, which was fractured and depressed to the depth of three-fourths of an inch. There was some loss of blood; total absence of intellect; severe convulsions at intervals, confined mostly to the muscles of the *right* side; face drawn to right shoulder; mouth contorted; pupils appeared natural, but not minutely examined; respiration stertorous; no vomiting, and nothing remarkable in the pulse.

The patient was placed on a matrass laid over a table, and with the assistance of Dr. C. and Dr. L. A. Dugas, Professor of Anatomy, the wound was extended, and a crucial incision made down to the bone. Two or three arteries required to be secured, and not having with us the forceps for torsion, the ligature was applied. The angles being dissected up, with Hey's saw, three portions of the external table of the cranium were elevated and removed. Some blood flowed from the deploic structure of the bone, and the patient now seemed to improve in breathing, and the convulsions ceased. From restlessness and severe convulsive movements, two or three of which excited alarm for the patient's safety, the operation was protracted nearly two hours; though sensible to pain, he remained perfectly unconscious during that time. The symptoms of compression gradually subsided; the patient opened his eyes when loudly called by name, and although the inner table of the cranium was plainly seen depressed to one-half or three-quarters of an inch at the bottom of the wound, its edges were simply brought together, and we separated at 11 o'clock to meet early in the morning.

Of the pieces of bone extracted, one was an inch and a half in length, by

a quarter to one in breadth, the other two were smaller, and were from the corresponding opposite side of the centre of depression.

Sunday the 9th, at 5 o'clock. Our patient had been quiet until four, when he awoke without recollecting any thing that had occurred since the accident; he was now rational, and even got up unassisted and urinated. He complained of the bruises on his face, of a stiff neck, and soreness over the whole body; felt the right arm, &c. benumbed; difficulty in speaking, tongue being swollen, slightly lacerated by the teeth, flattened and drawn to right side when moved; respiration good, and pulse so natural as to be counted only once during the whole treatment. The wound was dressed with sutures and adhesive plaster, and the weather being mild and pleasant, it was not disturbed for fifty-seven hours. Under daily dressings of adhesive strips and lint wetted with a solution of the chloride of soda, it rapidly improved. The upper angles of the incisions united by the first intention, the other two suppurated a little, but the twenty-third day after the injury, there remained only an opening about the size of a duck-shot at the centre of the crucial incision, from which there is still discharged about a tea-spoonful of matter in the twenty-four hours. The hair has nearly covered the cicatrices, and pressure does not excite pain. The tongue and hand progressively improved. In less than fifteen days from the operation, he carved for a public table at one of our hotels, and yesterday his employer said he was as well and active as ever he was.

As the symptoms of compression of the brain in this case appeared to be increasing before the operation, and as they gradually subsided with the flow of blood which followed the removal of the external and a small fragment of the internal table, we believe the pressure was produced by an accumulation of this fluid.

It may be, that exfoliations will still take place, or the patient be subject to attacks of epilepsy, but we do not believe that the probability of these occurrences would have authorized us in proceeding to remove the internal table of the cranium, when the urgent symptoms were relieved by the operation already described. And even should any untoward accident arise from the injury the brain has sustained, the trephine can still be employed with reasonable hopes of success.

Augusta, Georgia, July 1st, 1833.

On the Use of Ice and Chloride of Soda in Cynanche Maligna. By Samuel Jackson, M. D. of Northumberland, Pennsylvania. [Communicated in a letter to the Editor.]—In the last number of your Journal, p. 261, you have published an extract of my letter concerning the use of ice in cynanche maligna. This letter was written in April, 1832, and since that time I have had ample opportunities of testing this remedy. In more than forty cases I have found it highly useful, and without it I am certain more than one-half would have been lost. Drs. Magill of Danville, Baskins of Selinsgrove, and Lotz of New Berlin, have all used it with the happiest effect. So necessary has it become at the last named place, that Mr. Laschelles, a benevolent gentleman of that town, has refused to let his ice be used even in his own family, thinking proper to reserve it all for the sick.

The patient ought to hold it almost constantly in the mouth, as directed in my former letter, and swallow the solution; but if he be not old enough to rest on his guard against swallowing the undissolved lump, it may be enclosed in a gauze bag. If the fever be high, he may swallow small portions of it finely powdered.

If the child be too young to manage ice, we inject the coldest solution of it into the throat very frequently; and in these cases pounded ice may be swallowed if there is much fever.

I have often thought of using it externally, but somehow the only favourable opportunities of trying this method have been suffered to escape unimproved.—"Occasio celeris, experimentum lubricum, judicium difficile," says

the reputed father of physic, and as the disease has passed over us, I refer the experiment to others.

If you or your friends should try the ice, let me assure you that much will depend on the incessant use of it night and day, till the inflammation has evidently yielded. Till this time the patient can take very little rest, unless it be a mild case that may not require this uninterrupted repression and sedation. But in bad cases we must not suffer the disease to gain upon us during the night what it has lost under the use of ice the preceding day.

Every case of cynanche tonsillaris, or simple inflammatory sore throat which has fallen under our care for the last twelve months, has been treated with ice after bleeding, and with great advantage. And in one case of most severe aphthous sore throat, which attended a low bilious fever, that of Dr. Robbins, of Sunbury, he assured me it was the pleasantest thing he had ever experienced, and I may fairly add—the most useful. But even the comfort which this remedy brings, is not to pass unnoticed. Mr. Greenough's daughter, eight years old, was delirious in the cynanche maligna for many days, and the ice could not be used. During all this time, four days and nights, she swallowed not one tea-spoonful of any thing whatever, but was incessantly employed during all this time, unless when she might dose for a few minutes, in washing out her mouth with ice water, and to this must be attributed her safety.

Chloride of soda is another most noble remedy in this wayward disease. We have begun the use of it as soon as the cineritious specks appear, if at the same time there be general prostration; but if the gangrenous process is slow, and there is abundant vivacity in the system, it may be omitted altogether, and the ice continued. The sloughs will gradually and surprisingly disappear as the general inflammation of the fauces abates.

When the gangrene is considerable, and the inflammation is at the same time diffused, we use the ice and chloride alternately. But when the system is sinking, and we have reason to suppose that collapse is at hand, the ice must be omitted and the chloride used very strong.

With respect to the strength of our medicine, we are at some loss. Such as we have received from Philadelphia, we have used with from one part water to ten, according to the age of the patient and the state of the disease; but we are by no means satisfied with our experience on this subject.

In order to purify the stomach, we have given in the advanced stage of the disease, large doses of calcined charcoal, such as a drachm three or four times a day to a child ten years old.

We have bled freely in some cases, given calomel purges, poured abundance of cold water on the head when there was delirium, and sometimes have put the feet into warm water, while cold was applied to the head. We believe that many who are lost in this disease, perish of inflammation of the brain; hence we suppose that cups to the back of the neck would prove highly beneficial. Leeches to the throat, we are aware, have been used, but they cannot be generally attended to in the country. All these remedies are in trial among my medical friends, and when they shall have made their report, I will give you a more full account of our methods and their success, for the use of your Journal. Meanwhile, I hope that you will try these medicines, if an opportunity should offer, for I can assure you, that I have not lost one single patient of all whom I have myself exclusively attended. I began the ice with my first patient, my own child, and I have used it in nearly all the rest. A robust boy, four years old, son of William Zeclif, died, to the surprise of his friends, and without medical aid; I was soon called to the rest of the family, four miles in the country, where I found the mother, her sister, and three children, the youngest six months old, all very ill of the disease. Here was certainly a mortal disease, as it had already destroyed one of the family, but all the others recovered under the use of ice and chloride of soda. Mrs. Schuyler, of this town, lost one of her children of the disease at Pennsborough, twenty-seven miles above us. Here neither ice nor the chloride was used; but when the mother returned to

Northumberland, her other three children were severely attacked with the disease, and they all recovered under the use of ice, without any other application to the throat. Daniel Gossler, of this town, lost two children in whose cases neither ice nor the chloride was used, though under the care of a skilful physician, and great numbers died in the country above us, while the new remedies were yet unknown.

—

Case of Dislocation and Extraction of the Astragalus. By WILLIAM A. GILLESPIE, M. D. of Ellisville, Virginia.—On the evening of 23d March last, I was called to a Mrs. A——, a corpulent lady, aged about fifty, who had fallen from a horse, and dislocated both ankle joints. The luxation of the right foot was accompanied by that of the astragalus, which projected through a wound of the integuments of the external ankle. This wound extended from the instep to the tendo-Achillis, nearly as straight and smooth as if it had been inflicted by the knife. The severity of the injury induced me to seek consultation immediately, which I readily obtained in the persons of Drs. Fox, Goodwin, and Poindexter, to which gentlemen I am under obligations for their assistance and counsel. Our united opinion was to attempt to save the limb by removing the astragalus, and combating such symptoms as should arise. This bone was already partly without the joint, and confined to it, by only a few fibres of ligament, its connexions generally being ruptured, and its trochlea occupying about an angle of forty-five degrees from its natural position, consequently could only have remained as foreign matter, within the joint, without a possibility of regaining any permanent connexion with it. The wound of the integuments was sufficiently large to admit of its removal, without much pain or difficulty, by passing a bistoury in such direction as to separate its little remaining connexions. This operation was performed early on the next day. The integuments were now approximated, three stitches adhesive strips and light dressings applied. I must here observe that the pain at the time of the occurrence of the accident, and for several days afterwards, was so excruciating as to require the liberal administration of laudanum. On the third day she complained of stiffness of the lower jaw, and difficulty of deglutition, which induced me to fear the occurrence of tetanus. Laudanum was now more freely administered, and these symptoms yielded within twenty-four hours. Nothing remarkable took place now, until 1st April, when a decided disposition to gangrene supervened. The fermenting poultice prepared of bran, coarse flour, molasses, yeast, and water, was now applied, and kept sufficiently warm to ferment, by hot bricks placed on each side of the foot. In twenty-four hours there was most decided and great improvement in the appearance of the wound; the swelling, mostly, disappeared, together with the livid colour and dark spots previously on the lower part of the leg; the cuticle separated, and an abscess formed on the inner ankle which discharged a large quantity of pus. Poultices were continued for several days mixed with a decoction of red-oak bark. On the 3d April, hectic fever came on, attended by exhausting night sweats. Bark, wine, and diluted sulphuric acid, were now prescribed, the hectic soon began to yield, and by the 14th April had entirely disappeared. I must not here omit to mention that the leg piece of Professor N. R. Smith's apparatus for fractures of the os femoris, which is described in his "Medical and Surgical Memoirs," was early applied, and the leg suspended, which added evidently much to her comfort, and I am clearly of opinion accelerated the cure.

On the 19th April she had an attack of bilious pneumonia, which yielded to the ordinary remedies; but notwithstanding this the wound healed rapidly and progressively from about the 10th April to the 23d May, when it was entirely healed; the cure thus occupying only two months, a much shorter time than I had anticipated, and less I believe, than that of any case on record. She cannot yet walk, but I feel confident she will be able to do so after a reasonable time. Owing to the severity of the injury, and the excessive pain from the least motion of the injured parts, and her great weight, she was at first directed to re-

main in the most easy posture, which was on her back, and not to be moved; consequently she passed her urine and fæces in bed, which from the difficulty of keeping the parts clean, produced considerable excoriation. I therefore constructed an apparatus, (which I have not space to describe,) for raising her gently from the bed, so that a vessel could be placed under her to receive the urine and fæces. Her situation was rendered as agreeable, perhaps, as the nature of the case would admit, which is a great point, in my estimation, in the treatment of both medical and surgical diseases. Nothing that can render the patients' confinement more comfortable, whether in mind or body, should ever be denied, unless it is of a very injurious tendency in some respects.

The above is a statement of facts, from which, I think, some hints may be taken, or rather the testimony of the success of others strengthened. There are, I believe, but few cases on record, similar to the present one, but enough to demonstrate the propriety of removing the astragalus in preference to amputation, which was formerly the established practice in such cases. It is no small matter to save a limb, which seemed almost to demand amputation. Whilst modern surgery has achieved many feats of almost incredible success in the use of the knife, I feel confident that this science in its present rapid march of improvement, aided by experience, will clearly reveal the practicability of saving many useful limbs, which are now sacrificed, some of them, perhaps, at the shrine of ambition, thirsting for ill-earned fame by numbering heaps of amputated limbs!! The excellent effects of the fermenting poultice in this case, is worthy of recollection. It was prepared in such a way as to be *truly a fermenting poultice*, and its action appeared to be strongly antiseptic, whilst it destroyed the intolerable stench of the discharges. Another remark with respect to the use of laudanum when we have any apprehension of tetanus. I am of opinion that after all severe accidents or operations attended by much sensibility and pain, it is most proper to begin its administration early, and to keep the system under its sedative influence by sufficient and repeated doses. I have but little doubt, but for the administration of this potent drug, I should have had to contend with that very formidable disease.

—

On the Efficacy of the Cold Dash in Nervous and Convulsive Diseases. By Charles A. Lee, M. D. of New York.—In the last number of the American Journal of the Medical Sciences, there is mention made of the efficacy of the cold dash in convulsions of infants, particularly in cases of hydrocephalus. It is perhaps not generally known, that pouring cold water in a continued stream upon the head, is one of the most effectual remedies in most cases of nervous and convulsive diseases. In hysteria, epilepsy, chorea, delirium tremens, and catalepsy, I have employed this remedy with the most decided success, as well as in convulsions of children from teething. The following case of catalepsy I relate, not only because the disease is one of rare occurrence, but to illustrate the effects of cold, when applied in the manner above-mentioned.

In January, 1831, I was called to visit a coloured girl, aged fourteen, large for her age, and who had previously enjoyed good health, with the exception of slight pains in the right hypochondrium, extending to the spine, occasioned as was believed by a burn in that region, which occurred when she was a child. Latterly she had suffered much inconvenience from it, and the day when I first saw her, she had complained more than usual. I found her in the following situation. She lay on the floor on her back, in a perfectly insensible state, incapable of moving, or of being roused by pinching, calling aloud, shaking, or even by running pins into her flesh. She lay in the exact position in which she fell, and had not been seen to move in the slightest degree. The pulse was 100, of natural force, eyes closed, respiration easy, and the skin of usual temperature. I raised her arm to an angle of forty-five degrees with the body; it remained in that situation. I bent the forearm on the arm; it staid bent. The same occurred to her other limbs. They were easily flexed, but it required considerable force to straighten them again. The eyes were closed, and the

eyelids when raised shut in a short time. How long her limbs would have remained in the position in which they were placed I know not, but they continued thus while I was in the house, which was perhaps an hour. I noticed occasionally slight spasms in the muscles, but not sufficient to cause motion. She lay in this state fourteen hours, and then came out of it perfectly unconscious of any thing that had transpired. In about a fortnight afterwards she had another similar attack, from which she recovered in six hours. In three or four weeks from this time, she had a different attack, being violently convulsed, so that it required several persons to hold her, and prevent her injuring herself. Incurvation and recurvation of the body would alternately ensue with surprising rapidity. She foamed at the mouth, seemed unconscious of what she was doing, and sensation and voluntary motion were suspended. She had six or seven of these paroxysms, which lasted about twenty minutes each time, in the intervals lying as in the former fits. On pressure over the dorsal vertebræ she started as if it gave her pain, and moved her legs as long as the pressure was continued. She lay in this state twenty-four hours. I now directed cupping over the tender portion of the spine, and made an issue with concentrated nitric acid; this was kept discharging for several weeks, during which time she had no attack. In about a week after it healed she was again seized with a similar fit to the last, and lay *five days* perfectly insensible, without swallowing any thing. When she awaked she was but little inclined to eat, and as she had had no evacuation, digestion appears to have been in a measure suspended. The measures employed to shorten the duration of the fit, appeared to have but little effect except venesection, which evidently was beneficial in several instances.

About seven months since she became pregnant, and has had three returns of the disease in that time, from which she has immediately recovered by pouring cold water in a continued stream from a considerable height upon her head. In no instance has it been longer than five minutes before she was perfectly restored. I have no doubt, were it employed at the proper period, it would prevent an attack; but as there is generally no warning, or *premonitory symptom*, this is impossible.

New York, May 18th, 1833.

Case of Urinary Calculus successfully treated by Lithotrity. By P. S. Spencer, M. D., of Petersburg, Virginia.—Mr. Peter Bass, a young man of twenty-seven years of age, was attacked during the year 1827, with symptoms of stone in the bladder, which gradually increased in violence until they became nearly insupportable: great muscular debility, accompanied with loss of general health, was the result of the excruciating pains, and consequent watchfulness attendant on this disease. Exercise on foot or horseback was precluded by the aggravation of all the symptoms; and in truth the slightest motion produced the most severe pains. On his arrival at Petersburg, such was the irritable condition of his body, that it was expedient to prepare his system by an antiphlogistic course of saline purgatives, &c. before we considered it prudent to make an examination with the sound. On the introduction of that instrument, May 19th, 1832, the calculus was easily discovered; and on the following day, in the presence of Drs. White and Friend, I proceeded to perform lithotrity. I was enabled to seize the calculus without any difficulty, pain or inconvenience, and after perforating it in three different directions, I succeeded in crushing it into innumerable atoms, which readily passed off with the urine in the course of three days, without any irritation. The operation was completed in about twenty minutes. The fragments and powder of the calculus which were preserved after being discharged with the urine, when weighed amounted to sixty-five grains. He experienced very little pain during the operation, and would not have been confined to his bed more than a few hours, had not his own imprudence induced an attack of scarlet fever, which was at that time epidemic in this town. The weather was excessively cold for the season, and he was exposed to the night air by sleep-

ing with the windows raised; which cause, combined with the state of the atmosphere, and the excitable condition of his system, produced an attack of that disease. He was soon relieved by the ordinary treatment which consisted of the use of calomel, cathartics, and salts, and sulphate of quinine during the remission of fever, and the application of leeches to the temples when there was too great a determination of blood to the head. The red-pepper gargle with salt and vinegar was employed with advantage.

The operation has proven entirely successful in this instance. More than ten months has elapsed, and the patient continues to enjoy the best health. This hasty sketch is given to bring the operation into more general use in this country, as we deem it at once safe and successful in a large majority of cases. I contend that we want only experience in this important operation, to make it as successful in the United States as it is in France. We do not consider it any disparagement to the instruments, because they were thrown aside both in Philadelphia, and in some of the principal towns of the north of Europe. It is sufficient for us that we have seen it performed repeatedly in Paris, with complete success, by M. Leroy, M. Civiale, and M. Heurteloup.

—

On the Use of Calomel in Pruritus. By PHILIP YOUNGE, M. D. of Thomaston, Upton County, Georgia.—For the suggestion by Dr. Dewees of the use of a solution of borax in cases of pruritus, the profession must ever be thankful. Certainly few disorders which beset the pregnant state are more difficult to manage than pruritus. We have found the solution of borax a most efficient remedy when there was an aphthous efflorescence about the vagina. It has been my misfortune to treat cases of pruritus of the most uncompromising obstinacy. Every reasonable plan I had ever heard of, was followed to its utmost extent. A rigid antiphlogistic plan of diet, the borax, the hartshorn, cold water, mercurial ointment, bleeding and purging as far as consistent with pregnancy, were all tried without more than slightly palliating the affection, until I resorted to the local application of calomel. I had it sprinkled over every spot of inflammation within the vulva, as thoroughly as the nature of things would allow, three or four times a day. Whenever the itching became urgent, my advice was to wash the part by means of a syringe, with cold water, and reapply the dry calomel, which immediately calms the most insufferable irritation.

I have pursued this plan when the disease seemed perfectly unmanageable, with the happiest effects; although the disposition to recur was manifested until delivery, this remedy always appeased the distress.

—

Extraction of a Metallic Spark from the Anterior Chamber of the Eye. By T. D. MUTTER, M. D.—The patient, S. Thomas, a stone-cutter by trade, whilst employed in his vocation, was struck in the left eye by a spark given off from the steel instrument with which he worked. The spark entered the cornea, nearly at its centre, and passing entirely through it, lodged in the anterior chamber of the eye, where it could be distinctly seen, occupying a position in the inferior part of this cavity. When I saw the patient, fifteen hours after the occurrence of the accident, a good deal of inflammation had already taken place. An injected conjunctiva, a continual epiphora, and a sensation of smarting or burning referred to the entire ball of the eye, were the accompanying symptoms. The opening in the cornea about half a line in length seemed to be valvular, the spark having penetrated from below upwards, and its edges were smooth and regular, as if made with the point of a lancet. In consequence of the opening being valvular, but a small portion of the aqueous humour had escaped.

It appeared to me important, that an immediate extraction of the foreign substance should be accomplished, and the operation which seemed most simple, and at the same time best calculated to effect this purpose, was the section of the cornea, which I accordingly determined to perform. The patient was placed in the position recommended in the operation for extraction of cataract, a strong

light thrown upon the eye, and a flap composed of the cornea raised up with the lancet-shaped knife of Ware. A portion of metallic matter about the size of a mustard-seed flattened, was then readily extracted with the forceps. The flaps of the cornea was then adjusted, the lids closed, and a bandage lightly applied over the eye. As there existed a considerable degree of inflammation already, and to guard against a future aggravation of it, a blister behind the left ear, leeches to the temples, low diet, and a pretty active dose of the sulph. magnesia were prescribed. The patient recovered in a short time. It is an every day occurrence, among stone-cutters, for these small particles of steel to be driven into the sclerotica or cornea, where they produce more or less inflammation, if not immediately removed; but it is not so usual for them to penetrate entirely through the cornea, and lodge in the anterior chamber.

—

Dr. Hosack's *Memoir on Staphyloraphy.*—The principal point of interest in this memoir, is the account of a case in which Dr. Hosack has successfully performed the operation of staphyloraphy; and the description of a new instrument for passing the needle with ligatures, which last process constitutes the principal difficulty in the process.

Staphyloraphy was, we believe, first performed in this country by Professor Warren, of Boston, who has also devised an instrument for passing the ligatures. See Vol. III. p. 1, of this Journal.

—

Dr. Hayward's *Lecture on some of the Diseases of a Literary Life.*—This was delivered before the American Institute, Boston, in August last, and is a highly interesting lecture on a very interesting subject. We wish that the author, who is so competent to enlighten his profession and benefit the public, would make more frequent use of his pen.

—

Plate of the Fœtal Circulation, with References, by W. E. Horner, M. D. Professor of Anatomy.—This plate is engraved by Mr. Drayton, of whose skill in his art, this Journal furnishes numerous examples. As to its accuracy, it is sufficient to say, that it is a copy of the plate exhibiting the fœtal circulation in the magnificent work of Tiedemann; and that the references have been made by Professor Horner. Students have often great difficulty in understanding the fœtal circulation; a glance at this plate will at once make it manifest. The price of the plate is exceedingly moderate, and every student should possess himself of one.

—

Manec's *Plate of the Cerebro-spinal Axis.*—Messrs. Carey & Hart have purchased the remainder of the edition of this interesting plate, and have reduced the price to $2 50.

—

Study of Anatomy Legalized in Connecticut.—The General Assembly of the state of Connecticut has passed an Act similar to that enacted in Massachusetts, for legalizing the study of anatomy.

INDEX.

A.

Advertisements, 275.
Ammonia, hydrosulphuret of, 236.
Amputation at hip-joint, 539.
Anatomy, pathological, 483.
Andral on rachialgia, 524.
Aneurisms, 529.
Aneurism of temporal artery, 532.
——— of thyroid gland, 533.
——— subclavian, 246.
——— Mott's case of, 355.
Angina, œdematous, 527.
Anthelmintic emulsions, 517.
Anus, prolapsus of, 538.
Aphonia, cases of, 221.
Apocynum androsæmifolium, 379.
——— canabinum, 55.
Aricine, 547.
Arsenic, Peruvian bark as a counter-agent to poisonous effects, 273.
Asphyxia caused by tumour of left auricle, 228.
Astragalus, dislocation and extraction of, 552.
Atmospherical pressure, its effects on animal frame, 213.

B.

Baldwin's case of traumatic tetanus, 263.
Barrington on yellow fever, 307.
Binelli's hemostatic, 535.
Bill of mortality in Philadelphia, 265.
Bird's process for obtaining conia, 260.
Bladder, case of rupture of, 535.
Blandin's case of amputation at hip-joint, 539.
Blood, properties of, 201.
Boils, treatment of, 237.
Braithwaite's case in which the arm and scapula were torn off, 255.
Breschet on aneurisms, 524.
Bright on paralysis from painter's colic, 238.
Brodie on the urinary organs, 477.
Bronchitis, chronic, 524.
Broussais's case of gastro-enteritis, resembling cholera, 525.

C.

Cainça, root of, 515.
Calomel in pruritus vulvæ, 555.
Camphor and some volatile oils, analysis of, 259.
Capillary action, certain phenomena of, 548.
Carbonic acid, phenomena on suffocation from, 219.
Cardiac pathology, contributions to, 17.
Carswell's pathological anatomy, 483.
Caspar Hauser, account of, 194.
Caspar's treatment of cholera, 256.
Cerioli on hydro-ferrocyanate of quinine, 521.
Cervical vertebræ, luxation of, 244.
Cinchonine, 547.
Chapman's lecture on cholera morbus, 293.
Chemical philosophy, Mitchell's, 485.
Chloride of lime in psora, 523.
Chloride of soda, 527, 550.
Cholera, malignant, 76, 387.
——— treated by cold, 256.
——— statistics of, in London, 257.
——— comparative view of different modes of treatment, 258.
——— antiphlogistic treatment of, 259.
——— at Newcastle, Delaware, 261.
——— Chapman on, 293.
——— Jackson on, 76.
——— cold water in, 543.
——— at Havana, 433.
——— Cruveilhier on, 442.
——— at Dantzic, 457.
——— Mojon on cause of, 490.
——— without intestinal discharges, 546.
——— saline injections in, 546.
——— influence of putrid exhalations in the production of, 547.
Cold dash in convulsions of infants, 236.
——— in nervous diseases, 553.
Cold water in cholera, 543.
Colliquative diarrhœa, 520.
Conia, process for obtaining, 260.
Conium maculatum, analysis of leaves of, 260.
Constipation, cases of, successfully treated, 236.
——— protracted case of, 232.
Convulsions, infantile, 518.
Couper on cholera at Newcastle, Delaware, 261.
Cranium, compound camerated fracture of, 549.
——— hydatid cyst in, 510.
Cruveilhier on cholera, 442.
Cynanche maligna, 550.
Cyst in cranium, 510.

D.

Dalton on effects of atmospherical pressure on animal frame, 213.
—— on quantity of food taken by a person in health compared with secretions during same period, 216.
—— on influence of vinegar on urinary secretion, 236.
De Grave on modes of treatment of cholera in London, 258.
Despres on antiphlogistic treatment of cholera, 259.
Diarrhœa, colliquative, 520.
Dislocation and extraction of astragalus, 552.
Dispensatory of the United States, review of, 147.
Dupuytren on the excision of hæmorrhoidal tumours, 238.
——'s case of luxation of lower end of ulna, 244.
—— ——'s clinical lecture on retraction of fingers, 247.
—— on prolapsus ani, 538.
Dunglison's dictionary of medical science and literature, 274.
Ducatel, introductory lecture by, 274.
Dumas' analysis of camphor and some volatile oils, 259.
Dutrochet on endosmose, 221.

E.

Ehrenberg on attenuation of organized matter, 213.
——'s discoveries relative to infusoria, 205.
Elements of forensic medicine, 480.
Emerson's remarks on bill of mortality in Philadelphia, for year 1832, 265.
Emphysema, a new species of, after hæmorrhage, 233.
Emulsions, anthelmintic, 517.
Endosmose, 221.
Ergot, 515.
—— chemical analysis of, 548.
Euphorbia corollata, 71.
Eye, extraction of metallic spark from anterior chamber of, 555.

F.

Fever, Barrington on yellow, 307.
—— Hodge on puerperal, 325.
Fingers, retraction of, 247.
Food, quantity of, taken by person in health compared with secretions, 216.
Fracture, compound camerated, of cranium, 549.

G.

Gases, on law of the diffusion of, 189.
Gastro-enteritis, case of, resembling epidemic cholera, 525.
Geiger on hemlock and henbane, 235.
Gillespie on dislocation and extraction of, 552.
Griscom on apocynum canabinum, 55.
——'s notice of malignant disease generated on ship-board by, 272.
Graves on hydrosulphuret of ammonia, 236.
—— on treatment of boils, 237.
—— on infantile convulsions, 518.
—— on colliquative diarrhœa, 520.
Graham, on law of diffusion of gases, 189.

H.

Habitual constipation, protracted case of, 232.
Hamett on cholera, 457.
Havana, cholera at, 433.
Haxall, essay on fistular lachrymalis by, 274.
Heart, cases of disease of, 17.
—— case of perforation of, 225.
—— cases of spontaneous rupture of, 226.
—— death caused by tumour of left auricle, 228.
—— malformation and organic disease of, 510.
—— wound of, 531.
Hemlock and henbane, experiments on, 235.
Hemeralopia, 526.
Hemostatic, Binelli's, 535.
Hernia without external swelling, 543.
Hæmorrhoidal tumours, on excision of, 238.
Hip-joint, case of injury and secondary luxation of, 249.
—— amputation at, 539.
Hodge on puerperal fever, 325.
—— on cholera maligna, 387.
Hood on effects of tic douloureux, on mammæ and testes, 230.
Horner's experiment on vascular connexion of mother and fœtus, 353.
Hosack's memoir on staphyloraphy, 556.
Hurd's case of perforation of heart, 225.
Hydrosulphuret of ammonia, 236.
Hydroferrocyanate of quinine in intermittent fevers, 521.
Hysteria, 517.

I.

Iliac artery, case of ligature of external, 274.
Infantile convulsions, 518.
Infusoria, structure and functions of, 205.
Inflammation, diffused, after bleeding from foot, 541.
Intermittent fever, employment of hydroferrocyanate of quinine in, 521.
Intussusception, Jackson's case of, 372.

J.

Jackson on cholera, 76.
———'s case of intussusception, 372.
Jackson on treatment of scarlatina maligna by cold water, 261.
——— on cynanche maligna, 550.
Johnson on change of air, review of, 161.

L.

Laryngitis treated by laryngotomy, case of, 252.
Lee's case of splenitis, 383.
—— on cold dash in nervous and convulsive disease, 553.
Lithotrity, 554.
Lungs, emphysema of, in persons who have been strangled, 226.
Luxation of cervical vertebra, prognosis and treatment of, 244.
Luxation of lower end of ulna, case of, 244.

M.

Malformation of heart, 510.
Malignant disease generated on ship-board, 272.
Mammæ and testes, effects of tic douloureux on, 230.
Marsh on Peruvian bark, as counter-agent to poisonous effects of arsenic, 273.
Martini's elements of forensic medicine, 480.
Mitchell's cases of rheumatism, 361.
———'s chemical philosophy, 485.
Mojon on Asiatic cholera, 490.
Mott's case of extirpation of tuberculated sarcoma from the neck, 121.
———'s case of ligature of external iliac artery, 274.
———'s case of aneurism, 355.
Mutter's case of metallic spark in anterior chamber of eye, 555.

N.

Neuralgia, 238.
Nichol's case of subclavian aneurism, 246.
Nitrate of silver, mode of applying to ulcers of cornea, 526.

O.

Opium, constituents of, 235.
Organized matter, attenuation of, 213.

P.

Painter's colic, paralysis of upper extremities from, 238.
Pathological anatomy, 483.
Pelletier on constituents of opium, 235.
Percival on enlarged spleen, 238.
Peruvian bark as counter-agent to poisonous effects of arsenic, 273.
Phillips on prolapsus ani, 250.
Phosphuretted hydrogen, 548.
Phrenology, 473.
Pidduck's cases of obstinate constipation, 236.
Prolapsus ani, treatment of, 250.
Pruritus, calomel in, 555.
Prus on emphysema of the lungs in persons who have been strangled, 226.
Psora, treated by chloride of lime, 523.
Puerperal fever, 325.

Q.

Quinine, effects of large doses, 516.
——— employment of hydro-ferrocyanate of, 521.
——— chemical composition of, 547.

R.

Radix caincæ, 515.
Rachialgia, 524.
Rebolle de Gex on a new species of emphysema, 233.
Rheumatism, Mitchell's cases of, 360.

S.

Saline injections in cholera, 546.
Sagra on cholera at Havana, 433.
Scarlatina maligna successfully treated by cold water, case of, 261, 550.
Seifert on luxation of cervical vertebræ, 244.
Serre on union by first intention, &c. 183.
Shute on cold water in cholera, 543.
Six children at one birth, 218.
Skin, on structure and functions of, 198.
Spencer on lithotrity, 554.
Spleen, enlarged, on, 238.
Splenitis, case of, 383.
Spurzheim on phrenology, 473.
Staniland on protracted case of habitual constipation, 232.
Staphyloraphy, 556.
Statistics of cholera morbus in London, 257.
——— medical, for Philadelphia for 1832, 265.
Stomach, ulcer of, 515.
Stevens on healthy and diseased properties of blood, 201.

T.

Taylor on suffocation by carbonic acid, 219.
Temporal artery, aneurism of, 532.
Tetanus, case of traumatic, 263.
Tic douloureux, effects of, on mammæ and testes, 230.

Tiedemann's physiology, review of, 123.
Townsend's cases of spontaneous rupture of the heart, 226.
———— on death from asphyxia, caused by tumour of left auricle of heart, 228.
Tracheotomy, 527.
Transylvania university, 274.
Trousseau and Rullier on neuralgia, 238.

U.

Ulcer of stomach, 515.
Union by first intention, treatise on, 183.
University of Pennsylvania, 274.
Urinary organs, lecture on, 477.
Urinary secretion, influence of vinegar on, 236.

V.

Vinegar, influence of, on urinary secretion, 236.

W.

Ward's case of injury and secondary luxation of hip-joint, 249.
Webster's case of aphonia, depending on an affection of head, 221.
Wood and Bache's dispensatory, 147.
Wood on structure and functions of the skin, 198.
Wright's contributions to cardiac pathology, 17.

Y.

Yellow fever, Barrington on, 307.
Young on calomel in pruritus, 555.

Z.

Zollickoffer on euphorbia corollata, 71.
———— on apocynum androsæmifolium, 378.